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PREFACE.

IN the preface which accompanied the original issue of this work, its object was stated to be, "To supply, in monthly parts, as full an account of all the new and remarkable plants introduced into cultivation as is necessary to the horticulturist; the history of such plants being sought in botanical works published on the Continent, to which English cultivators have little access, as well as in those of our own country, and in the gardens or herbaria from which they are derived."

"It was expected that by this means the English reader would be able by degrees, by mere reference to the indexes of matter accompanying each part, to ascertain the real horticultural value of the numberless so-called novelties with which the lists of dealers are crowded. The abundance of double names, which botanists call synonyms, but which, in common parlance, are termed aliases, would also, it was hoped, be gradually referred to their true denomination, and the purchaser thus be spared the mortification of finding that after procuring half a dozen different names, he is still in possession of but one species, and that, perhaps, one with which he was previously familiar."

Since the first publication there has been a great change in the introduction of new plants. Now, as compared with times past, they come in immense numbers direct to this country. Private enterprise has opened up new channels through which we obtain the productions of every clime that possesses anything of either a useful or ornamental character that can be grown here, either in the open air or with the aid of greenhouse or hothouse. It is needless to say that some of these are not worthy of the cultivator's care, and cannot claim notice in a work of this description, the object of which is to act as a guide in what are the best and most deserving of cultivation amongst the new introductions. With this object, such of the plants that were represented in colours in the first edition, and have been proved inferior and unworthy of general cultivation, have been expunged, and their places filled in the new edition with the best of recent introductions, selecting a fair proportion of both hardy and tender kinds. In like manner, all that were described in the gleanings in the old edition, and found inferior, have been discarded, and their places supplied by others of undoubted merit.

Particular care is taken that no plant that does not give promise of being really worthy of general cultivation is admitted to the revised edition. This applies as much to those that require artificial heat to grow them, as it does to the hardy kinds; respecting the latter section, it may be said that there are fewer to choose from than in the case of the tender exotics. Preference of place is given to species, particularly amongst the subjects that are chosen for coloured plates, but, with a view to make the work of as much use as possible to the gardening community, such hybrids as possess unusual merit are admitted.

Accompanying all the new plants short cultural notes have been given, which, it is hoped, will be useful in their cultivation.





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[PLATE 1.]

THE THICK-LEAVED AIR PLANT.

(AÈRIDES CRASSIFOLIUM.)

A Superb Stove Epiphyte, belonging to the order of ORCHIDS: *from* BIRMAH.

Specific Character.

AÈRIDES CRASSIFOLIUM.—This differs from A. Falcatum in the spur being bent under an angle. Side laciniæ of the lip much broader and shorter in this than in the old species. The two keels on the disc of the lip stand close together at the base, then are contiguous and diverge, finally arching on both sides; quite the contrary in A. Falcatum, where they begin by being distant, and are convergent in the middle of the lip. Colour bright purple.

Gardener's Chronicle, N.S., Vol. VII., p. 590.

THIS splendid plant, although introduced to this country some years ago, is still scarce, but when better known and more plentiful will no doubt become a general favourite, which it richly deserves to be, as we have no hesitation in placing it at the head of the genus—and this is saying a good deal, considering the many fine species previously known. We believe the first example of this Aèrides that flowered in England was in the well grown collection of R. B. Dodgson, Esq., of Blackburn, who has now for several years exhibited one or more specimens at the Blackburn Horticultural Exhibition, where we saw it, and at once realised the fine, very large, distinct character of the individual flowers, unequalled in their colour, and the equally distinct and handsome appearance of the plant. In the summer of 1878 it bloomed with Messrs. Veitch, of Chelsea, from whose plant our illustration was taken. It is a flower that cannot fail to take the attention of all lovers of these most fascinating plants, the cultivation of which, from their first being sufficiently known, and their management better understood, has rapidly increased, until instead of being, as they once were, confined to some half-dozen collections dispersed over the kingdom, are now to be met with grown more or less extensively by the majority of people who cultivate heat-requiring plants; and there is every reason to suppose that their cultivation will still further extend, as they possess a charm unequalled in the whole range of flowering plants. The fine, well-known Aèrides Larpentæ (Syn. Falcatum) probably comes nearest to the present subject, although quite distinct in the external appearance of the flowers. Though, as we have already stated, the cultivation of these plants is better understood than at one time, still a few hints on their management may be acceptable to some.

This Aèrides, like all its congeners, being a true thick-rooted air-plant, requires a material for the roots to revel in that is of a perfectly loose, open nature, that will not only admit of the water given percolating freely through it, but also allow air to reach the roots freely, without which they perish. Even the vegetable fibrous matter out of the best peat, with all the earthy portion removed, which is found suitable for such Orchids as Cattleyas, Lælias, Oncidiums, Epidendrums, and others of like character, is not light enough for these thick-rooted species. Nothing that has yet been used is found equal to British bog moss sphagnum, which appears to answer all the requirements of the plants, both in affording them the sustenance required, and as a medium for keeping the thick, fleshy roots continuously moist through the growing season, and slightly so during their period of rest; it also possesses the property of resisting decay for a considerable time, even when kept quite moist. These thick-rooted Orchids are frequently cultivated in baskets composed of strips or thin bars of wood more or less durable in character. The only advantage they possess over ordinary pots is that their being lighter admits of their being suspended from the roof, and thus elevating the plants nearer to the light than could be carried out to any considerable extent with plants all grown in pots; consequently, taking into consideration the perishable nature of wooden baskets, pots may be considered preferable for these plants. Charcoal is a better material to mix with the sphagnum than crocks, as also for draining the pots. The plants should never be allowed to remain too long in the same material without wholly replacing it with new, for if too far decomposed the roots suffer in it. Always re-pot sufficiently early, before the season's growth has commenced; give enough water to promote healthy growth, but never allow the sphagnum to get saturated, as is sometimes done; keep sufficient moisture in the atmosphere without overcharging it—a condition fraught with the worst consequences, by producing weak, delicate growth, alike incapable of flowering freely, enduring so long as it should, or allowing of the plants keeping dry enough in winter. With a like view, let the house in which they are grown be situated and constructed so as to afford a maximum of light; do not shade too heavily, and never when the direct effects of the sun's rays upon the plants are not such as to require it. Give air every mild day through the growing season for a sufficient time to dry up moderately and sweeten the atmosphere of the house. In spring the temperature may range from 65° in the night to 70° or 80° by day; in summer from 70° in the night to 80° or 85° through the day. During the winter, when at rest, about 60° night, and 65° day.

Amongst the from thirty to forty species or forms of Aèrides in cultivation, it may be said that there is not an indifferent flower, yet some are very much superior to the rest. In addition to the subject of our plate, we append the names of a few of the best:—A. Larpentæ, A. Fieldingii, A. Maculosum Schröderii, A. Crispum, A. Quinquevulnerum, A. Lobbii, A. Affine, A. Suavissimum, A. Virens, A. Rubrum, A. Odoratum Purpurascens.

grow; but, like other fine things comparatively slow of increase, its cultivation, from the large demand for it, until it gets more plentiful, will be in a great measure, no doubt, confined to pots. There appears to have been some little confusion betwixt this and one or two other species. For instance, Loudon, in his "Hortus Britannicus," gives a Spiræa Palmata bearing red flowers as introduced from China in 1823, and which has been supposed by some to be identical with the present subject, which is evidently not the case, as this is a deep crimson-flowered plant from Japan. Neither can it be identical with the North American S. Palmata, of Linnæus, which bears rose-coloured flowers. The plant was introduced by Messrs. Standish and Noble, of Bagshot, through the indefatigable traveller and collector, Mr. Fortune.

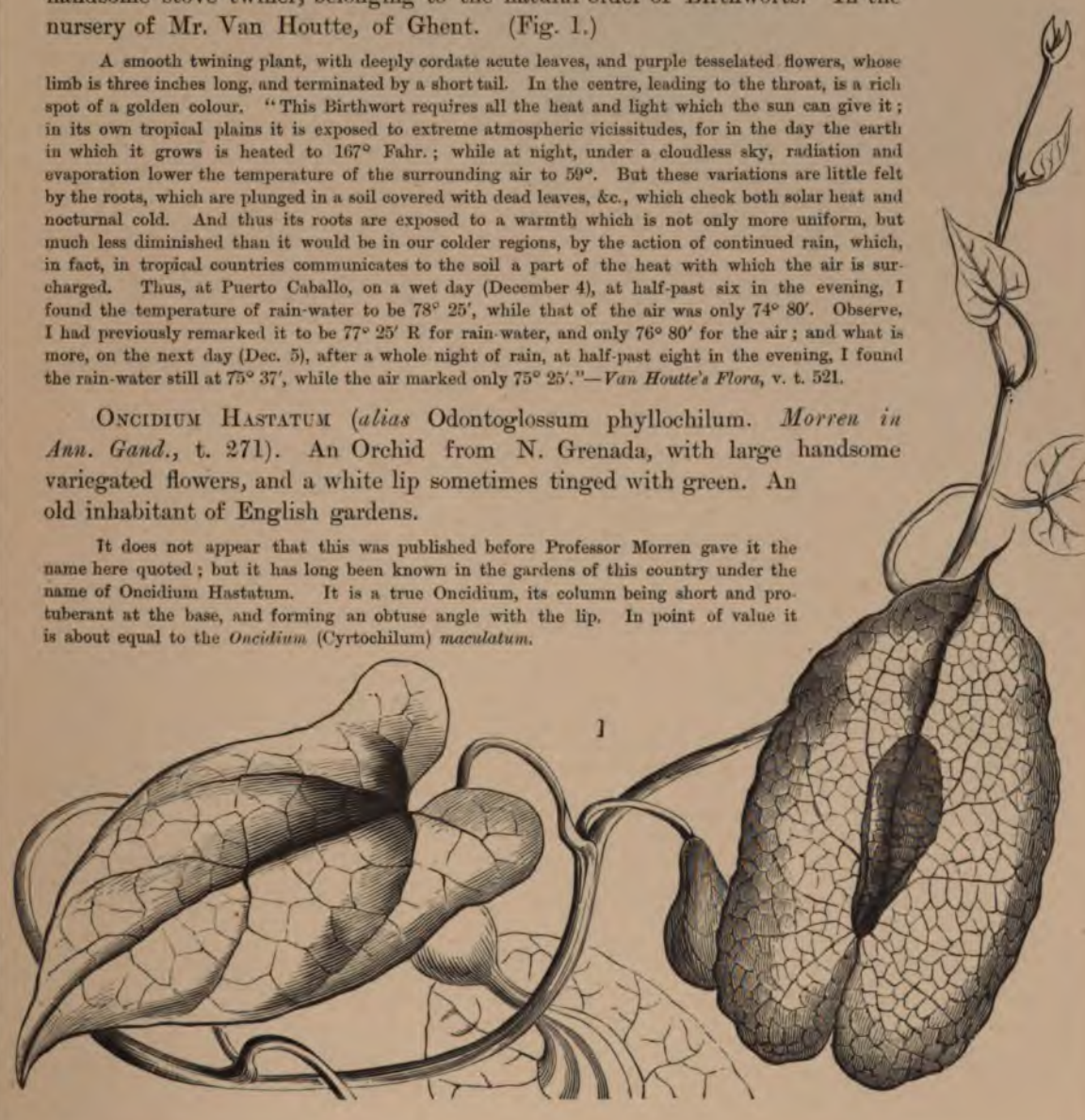
GLEANINGS AND ORIGINAL MEMORANDA.

ARISTOLOCHIA PICTA. *Karsten.* From the Caraccas. A curious and rather handsome stove twiner, belonging to the natural order of Birthworts. In the nursery of Mr. Van Houtte, of Ghent. (Fig. 1.)

A smooth twining plant, with deeply cordate acute leaves, and purple tesselated flowers, whose limb is three inches long, and terminated by a short tail. In the centre, leading to the throat, is a rich spot of a golden colour. "This Birthwort requires all the heat and light which the sun can give it; in its own tropical plains it is exposed to extreme atmospheric vicissitudes, for in the day the earth in which it grows is heated to 167° Fahr.; while at night, under a cloudless sky, radiation and evaporation lower the temperature of the surrounding air to 59°. But these variations are little felt by the roots, which are plunged in a soil covered with dead leaves, &c., which check both solar heat and nocturnal cold. And thus its roots are exposed to a warmth which is not only more uniform, but much less diminished than it would be in our colder regions, by the action of continued rain, which, in fact, in tropical countries communicates to the soil a part of the heat with which the air is surcharged. Thus, at Puerto Caballo, on a wet day (December 4), at half-past six in the evening, I found the temperature of rain-water to be 78° 25′, while that of the air was only 74° 80′. Observe, I had previously remarked it to be 77° 25′ R for rain-water, and only 76° 80′ for the air; and what is more, on the next day (Dec. 5), after a whole night of rain, at half-past eight in the evening, I found the rain-water still at 75° 37′, while the air marked only 75° 25′."—*Van Houtte's Flora*, v. t. 521.

ONCIDIUM HASTATUM (*alias* Odontoglossum phyllochilum. *Morren in Ann. Gand.*, t. 271). An Orchid from N. Grenada, with large handsome variegated flowers, and a white lip sometimes tinged with green. An old inhabitant of English gardens.

It does not appear that this was published before Professor Morren gave it the name here quoted; but it has long been known in the gardens of this country under the name of Oncidium Hastatum. It is a true Oncidium, its column being short and protuberant at the base, and forming an obtuse angle with the lip. In point of value it is about equal to the *Oncidium* (Cyrtochilum) *maculatum*.



1

ECHINOCACTUS RHODOPHTHALMUS. *Hooker.* A Mexican Hedgehog Cactus, with an oblong stem, and handsome red flowers appearing in August.

Received from Mr. Staines, who procured it from the neighbourhood of San Luis de Potosi, in Mexico. In its flourishing state it is extremely handsome, the deep red of the base of the petals forming a ring, as it were, round the densely-clustered stamens and bright yellow rays of the stigma, adding much to the beauty of the blossom. Mr. Smith gives the following account of the manner in which such plants are managed by him at Kew:—"At Tab. 4417, we have said that *Cacteæ* are almost indifferent as to the kind of soil they are grown in, provided it is not retentive of moisture. The present very pretty species will thrive in a mixture of light loam and leaf-mould, containing a small quantity of lime-rubbish nodules, the latter being for the purpose of keeping the mould from becoming close and compact, a condition not suitable to the soft and tender roots of the plant. If cultivated in a pot, it must be well drained; the pot being nearly half filled with broken potsherds, and the upper layer so placed as to cover the interstices, in order to prevent the mould from mixing with the drainage. During winter, Mexican *Cacteæ* do not require much artificial heat; several species are, indeed, known to bear with impunity a few degrees of frost. Where they can be cultivated by themselves, we recommend that the plants and atmosphere of the house should be kept in a dry state during winter, artificial heat being given only during a long continuance of damp cold weather or in severe frost; but at no time during winter needs the temperature of the house to exceed 50° at night. In sunny days in spring the house should be kept close, in order that the plants may receive the full benefit of the heat of the sun's rays. As the summer-heat increases, air should be admitted, and occasionally the plants should be freely watered, and in hot weather daily syringed over-head."—*Botanical Magazine*, t. 4486.

VALORADIA PLUMBAGINOIDES. *Boissier.—Botanical Magazine*, t. 4487.

This is an *alias* of the now common Plumbago Larpentæ, which is thought by Boissier not to belong to Plumbago. We see very little, however, to characterise a genus in the differences pointed out, and agree with Sir W. Hooker, in thinking that if a new genus is really necessary, the plant ought to bear the older name of Ceratostigma.

METROSIDEROS TOMENTOSA. *Achille Richard.* A New Zealand greenhouse shrub of much beauty, flowering in the summer months. Blossoms rich crimson. One of the order of Myrtle Blooms (Myrtaceæ).

"It inhabits," says Mr. Allan Cunningham (by whom it was introduced to the Royal Gardens of Kew), "usually the rocky sea-coast and shores of the Bay of Islands, where it is called by the natives Pohutu-Kawa, and is readily distinguished among other plants by the brilliancy and abundance of its flowers, enlivening the shores of the northern island with its blossoms in December. With us in the greenhouse it has attained the height of six feet, and attracted attention by its copious, compact, but spreading ramification, and the abundance and beauty of its evergreen foliage. Its blossoming for the first time was probably encouraged by planting it out, by way of experiment, in the spring, in a sheltered part of the woods of the pleasure-ground, in a soil of rich vegetable leaf-mould. During the summer, almost every branchlet was terminated by the vivid scarlet blossoms, and it became a conspicuous object at a distance. In its native country it is described as making its first appearance on other trees, as an epiphyte. By its strong and rapid growth it soon envelops the parent tree, its woody roots descending till they reach the ground, and there spreading to a great extent, while the main roots, by their numbers and interlacings, ultimately become so combined that they form a trunk of a singular appearance and sometimes of an immense size. The original tree dies, and its decaying trunk becomes food for the parasite; the latter in this respect resembling the fig-trees of the tropics or the ivy of this country. It is also said to form a tree without the aid of others. With us it grows luxuriantly if planted in light loam and kept in a cool greenhouse, and forms a handsome evergreen bush. The figure here represented was made from an individual that had become too large for our greenhouse accommodation. As it afforded the opportunity of testing the degree of cold it would bear, a sheltered situation amongst trees was selected, where it was planted in May, 1849. During the summer it flowered profusely, presenting a very striking appearance for an out-door shrub, and continued to flourish till the first frosts; but we observe with regret that this fine shrub will not live in the open air where the thermometer falls a few degrees below the freezing-point."—*Botanical Magazine*, t. 4488.

DRACÆNA GOLDIEANA. This grand plant, distributed by Mr. Bull, of King's Road, Chelsea, is no doubt one of the finest and most distinct handsome-leaved stove subjects of moderate growth that has yet been introduced—totally distinct from all other Dracænas, or, in fact, everything else. When first exhibited, even in a small state, it made quite a sensation amongst lovers of plants possessing beauty in form and colour of their leaves;

and this impression has in no way been impaired upon further acquaintance, when its growth has been more fully developed. It is from western tropical Africa, and will doubtless, therefore, require a brisk stove temperature, with soil of a peaty nature, intermixed with a little sand, and kept moderately moist at the root, and in the atmosphere.

"It has erect stems, from which are produced stout leaf-stalks, supporting leaves ovate-lanceolate in form, ample in size, transversely marked with broad alternate wavy bands of dark green and pale greenish-grey, clear, and well defined."—*Gardener's Chronicle*, 1872, p. 1232.



2

Berberis Japonica. *Lindley; alias* Ilex japonica, *Thunberg; alias* Mahonia japonica, *De Candolle; alias* Berberis beallii, *Fortune*. A magnificent evergreen shrub, with broad pinnated leaves, imported from the north of China, by Messrs. Standish and Co. At Fig. 2 is represented the upper part of the leaves of the natural size.

"A live plant has now been received by Messrs. Standish and Noble, of Bagshot, from Mr. Fortune, who informs them that it grows from 100 to 150 miles north of Shanghae, and that it is the most gigantic of the Berberries. A leaf which has been sent me by Mr. Standish is nearly fifteen inches long, and of a stout leathery

texture; it originally had four pairs of leaflets, and the usual terminal one; the lower pair has dropped off. The other lateral leaflets are sessile, slightly cordate, about three and a half inches long, with from three to four strong spiny teeth on each side, and a very stiff triangular point; the terminal leaflet is five inches long, and very deeply cordated, with five coarse, spiny teeth on each side. This is certainly the finest of the genus."—*Journ. Hort. Soc.*, vol. v., p. 20.

RONDELETIA BACKHOUSII. This plant, we understand, was sent to Kew by Messrs. Backhouse, of York, who have been the means of introducing so many subjects worthy of cultivation to this country. It is from tropical America.

"A small stove shrub, glabrous in all its parts, except the pedicels, calyx, and corolla tube, which are minutely pubescent. Stems and branches slender, terete, green; leaves opposite, shortly petioled, four to nine inches long, ovate, subacute, membranaceous, green, with red petiole and veins beneath. Stipules triangular, subulate, adpressed, persistent. Panicle terminal, erect, many-flowered, trichotomously branched. Flowers pedicelled, half to three quarters of an inch long, rose-coloured. Calyx tube nearly globose. Corolla tube slender, twice or thrice as long as the calyx lobes, pubescent. Limb one-third of an inch diameter, lobes rounded, throat glabrous. Stamens small, inserted in the middle of the tube. Style very short. Stigmatic-lobes linear."—*Botanical Magazine*, 6290.

MIRABILIS MULTIFLORA. A very beautiful half-hardy plant, of herbaceous character, from California; raised by Mr. Thompson, of Ipswich.

"A tall, stout, much-branched herb, clothed everywhere with a glandular pubescence, which varies much in quantity. Branches obscurely quadrangular, divaricating; tumid at the nodes. Leaves three to four inches long, opposite petioled, ovate, orbicular-ovate, or ovate-cordate, acute, or acuminate, rarely obtuse; sometimes two-lobed at the base, rather thick, quite entire; nerves spreading; petiole stout. Flowers in terminal panicles, with opposite branches, four to seven together, in a green cup-shaped or bell-shaped peduncled involucre, which is about one foot long, and has four or five short, acute, or obtuse, erect lobes. Perianth bright purple; tube two inches long, funnel-shaped; limb flat, five-lobed; lobes rounded, notched at the lip. Stamens five to six, hardly exserted. Anthers small, yellow. Style long and slender."—*Botanical Magazine*, 6266.

ANTHURIUM VEITCHII. This magnificent plant was received by Messrs. Veitch from Mr. Wallis, who sent it from Columbia. It is alike singular in structure and effective in appearance—probably more so than any of the handsome-leaved aroids that have preceded it, which is saying much, when it is remembered that we already possess such plants as Alocasia Lowii, A. Veitchii, and others. It is a subject that will no doubt be generally cultivated when sufficiently plentiful.

"Leaf-stalks two to three feet long, cylindrical; blade of leaves two feet in length, leathery, bright green above, pale beneath, ovate-oblong, acute cordate at the base; midrib thicker near the base, where it is rounded on the upper surface, near the apex depressed; secondary nerves arched, depressed on upper surface, prominent on lower; near the edge they anastomose together, forming an intra-marginal vein. Spathe spreading, oblong, white, many-nerved. Spadix two to two and a half inches long, cylindric, obtuse, pinkish-white, covered with whitish flowers."—*Gardener's Chronicle*, N.S., vol. vi., p. 772.

MERTENSIA SIBIRICA. *G. Don.* Altai Mountains. A hardy perennial. Flowers blue. Obtained from Siberia by Mr. Van Houtte, of Ghent. Natural order, Borageworts.

"The glaucous leaves and beautiful blue flowers appear with the earliest spring. Easily multiplied by division of the roots."—*Van Houtte's Flora*, v. 518, c. Apparently a pretty rock-plant.

ANÆCTOCHILUS LOBBIANUS. *Planchon.* A terrestrial Orchid figured in *Van Houtte's Flora*, v. t. 519; appears to be in no respect different from *Anæctochilus Roxburghii.*

BERBERIS WALLICHIANA. *De Candolle* (*alias* B. macrophylla *of the Gardens; alias* B. atrovirens, *G. Don*). A hardy evergreen bush from the mountains of tropical Asia. Imported by Messrs. Veitch.

"An evergreen of most beautiful aspect, with brown branches, a very dark green dense foliage, and long, slender, three-parted spines. The leaves grow in clusters, are about three or four inches long, with a sharp, prickly point, and numerous fine serratures, ending in a straight point on each side; on the upper side they are a rich bright green,

turning to a claret colour in the autumn, and remarkably netted; on the under side they are pale green, and shining. Naturally it is said to grow ten feet high."—*Journ. Hort. Soc.*, vol. v., p. 4.

BERBERIS LOXENSIS. *Bentham.* A hardy, or half-hardy evergreen shrub, imported by Messrs. Veitch and Co., from Peru. (Fig. 3.)

"It has small palmated spines, and very shining, blunt, obovate, bright green leaves, of nearly the same colour on both sides; they seem to have in all cases a spiny point, and very often several teeth at the sides. The flowers are unusually small, and stand erect in panicled racemes on a long peduncle quite clear of the leaves."—*Journ. Hort. Soc.*, vol. v., p. 7.

BERBERIS DARWINII. *Hooker.* From Chiloe and Patagonia. A hardy evergreen bush of great beauty, imported by Messrs. Veitch. (Fig. 4.)

"An evergreen shrub three to five feet high, of extraordinary beauty, conspicuous for its ferruginous shoots, by which it is at once recognised. The leaves are of the deepest green, shining as if polished, not more than three-quarters of an inch long, pale green, with the principal veins conspicuous on the under side, with three large spiny teeth at the end, and about one (or two) more on each side near the middle. Although small, the leaves are placed so near together that the branches themselves are concealed. The flowers are in erect racemes, and of a deep orange yellow."—*Journ. Hort. Soc.*, vol. v., p. 6.



BERBERIS TINCTORIA. *Leschenault.* An Indian sub-evergreen shrub. (Fig. 5.)

"The plants in gardens are slender, brown-wooded shrubs, with small slender spines, usually three-parted. The leaves are thin, not shining, dull green above, glaucous beneath, oblong, blunt, with a spiny point, but scarcely spiny-toothed, except on the seedling plant."—*Journ. Hort. Soc.*, vol. v., p. 13. At the lower part of Fig. 5 are represented the early leaves of this species, which are cordate and long-stalked, and quite different from the later leaves.



FRITILLARIA RECURVA. A Liliaceous half-hardy—or, possibly, in some parts of the kingdom, quite hardy—plant, from California. Apparently the handsomest of the genus, and deserving of cultivation.

"Bulb globose, squamose, sending out copious radicular fibres all round the base. Stem erect, glabrous, purple mottled with green, varying from half a foot to two feet in height. Leaves six to twelve, placed all near the middle of the stem, the lower ones in whorls of three or four each, the upper ones scattered, all linear-sessile, ascending, glabrous, green, two to four inches long. Flowers two to eight in a terminal raceme, drooping, or the upper ascending. Pedicels shorter than the flowers, each subtended by a single bract, which is like an ordinary leaf in shape and texture, but smaller. Perianth one to one and a half inches long, between funnel-shaped and bell-shaped, bright scarlet on the outside, in the inside spotted with scarlet on yellow ground. Segments subequal, oblanceolate, oblong, subacute, reflexed at the top when expanded, with an obscure, narrow, oblong nectary at the base. Stamens rather shorter than the perianth. Anthers small, yellow, oblong. Ovary clavate. Style twice as long as the ovary, obscurely three-lobed at the stigmatose tip."—*Botanical Magazine*, 6264.

BLANDFORDIA FLAMMEA. *Lindley*. From New Holland. A beautiful greenhouse perennial, flowering in October. Flowers two and a half inches long, vivid orange scarlet. Introduced by Messrs. Low and Co. Natural order, Lilyworts (Liliaceæ).

"This, which is perhaps the finest of the Blandfordias, in a vigorous state, is full four feet high, and bears five or six flowers at the end of its graceful stem. The leaves are narrow and stiff; the flowers about three and a half inches long, one and a half inches across the mouth, of the most vivid orange scarlet, with a broad edge of clear yellow. It is even handsomer than B. intermedia and marginata."—*Journ. Hort. Soc.*, vol. v., p. 32.

CHEIROSTYLIS MARMORATA. *Lindley* (*alias* Dossinia marmorata, *Morren*). From Borneo(?). A pretty herbaceous stove plant, belonging to the natural order of Orchids, flowering in September. Flowers white. Introduced by Mr. Hugh Low.

"The leaves are of a deep reddish olive-green, with a velvety surface, and are traversed by fine golden veins, which disappear to a great extent when the leaves become old. It is far less beautiful than Anæctochilus setaceus or Monochilus regius. The flowers are white, with a reddish calyx, in a long, dark, purple, downy raceme. Although destitute of striking beauty, they well repay a minute examination, being covered with pellucid glands, and frosted, as it were, over all the inner surface. Requires damp heat, and a mixture of three parts chopped sphagnum and one-third well-decayed leaf-mould. Increased by the creeping stems."—*Journ. Hort. Soc.*, vol. v., p. 79.

HELIANTHEMUM SCOPARIUM. *Nuttall*. From California. A small hardy shrubby rock-plant, belonging to the natural order of Rock Roses or Cistaceæ, flowering in September. Flowers yellow. Introduced by the Horticultural Society.

"A small prostrate shrub, with wiry branches and linear leaves. The flowers, which are small and bright yellow, grow in twos and threes at the end of the branches on naked pedicels about half an inch long. A hardy little shrub, requiring the same treatment as Cistuses. A very nice species for rock-work, on which it thrives in the full glare of the sun."—*Journ. Hort. Soc.*, vol. v., p. 79.

ANTHURIUM BROWNII. A stove aroid, introduced by Messrs. Veitch. Discovered by Mr. Wallis in New Grenada. Of large proportions and imposing appearance. A fine addition to our ornamental-leaved stove plants. It will no doubt succeed best in good fibrous peat, to which has been added some chopped sphagnum, sand, and a sprinkling of broken crocks. Pots extra well drained, so that the plentiful supply of water which it needs may get away. Temperature, that of an ordinary stove.

"Leaves thick, and leathery in texture, deep green, quite smooth and shining, and elevated on moderately stout stalks, from two to two and a half feet in length. Spathe eight inches in length. Spadix shortly stalked within, or above the spathe, covered with purplish four-parted flowers. Perianth segments, oblong, thickened, and truncate at the extremities. Stamens broad, petaloid. Anther cells widely divergent at the base. Pollen cells globular, studded with a few asperities."—*Gardener's Chronicle*, N.S., vol. vi., p. 744.

PENTARHAPHIA CUBENSIS. *Decaisne*. A tender shrub from Cuba, belonging to the order of Gesnerads. Flowers tubular, scarlet, appearing in the summer, handsome.



"A shrub with a compact habit, and dark green, convex, evergreen leaves, obovate, crenated near the point, and netted on the under side with green veins on a pale ground. The flowers grow singly in the axils of the leaves, on cinnamon-brown stalks an inch long. The corolla is about the same length; tubular, curved, and rich scarlet, with a projecting style. The calyx consists of five straight, narrow, sharp lobes, not unlike five brown needles, whence the generic name has arisen; requires a temperature intermediate between the greenhouse and stove; easily increased by cuttings, and grows freely in loam, peat, and leaf-mould."—*Journ. Hort. Soc.*, vol. v., p. 36. *With a figure.*

SPIRÆA DECUMBENS. *Koch* (*alias* S. flexuosa, *Reichenbach*, not *Fischer*; *alias* S. adiantifolia, of *Belgian Gardens*). A hardy European shrub of the Rosaceous order, with weak twining stems, and clusters of white flowers with a rose-coloured eye. In the Belgian Gardens. (Fig. 6.)

"This species is a native of the mountains of the Frioul, where it was found by Schiede. It is at present little known, although its graceful habit and abundant sweet white flowers give a claim to the attention of amateurs. It forms a bush about a foot high, and one and a half feet wide, tufted, with numerous shining brown branches. The leaves are obovate or oval, long-stalked, unequally serrated, entire near the base, green above, glaucous beneath. The flowers are in little terminal corymbs. It is perfectly hardy, and is suitable for planting in front of larger shrubs."—*Annales de Gand*, t. 262. To us it seems to be a very pretty rock-plant.

GRAMMANTHES GENTIANOIDES. *De Candolle.* A native of the Cape of Good Hope, and a half-hardy annual. Flowers salmon colour, in hemispherical clusters. Natural order, Gentianworts. (Fig. 7.)

Stems a few inches high, white and brittle. Leaves oblong, blunt, succulent. Flowers numerous, about as large as a sixpence, five-parted, salmon-coloured, with a pallid stain at the base of the lobes, and a greenish stain somewhat in the form of the letter V. It is rather pretty in a greenhouse, but is not suited for the open air, where it soon rots, even when elevated on rock-work.—Figured in *Van Houtte's Flora*, Oct., 1849, t. 518.

CALANDRINIA UMBELLATA. *De Candolle.* A native of Chili, belonging to the natural order of Purslanes. A very pretty half-hardy annual, with deep rose-coloured flowers growing in clusters, opening only under a bright sun. (Fig. 8.)

Stems fleshy, somewhat branched. Leaves very narrow, acute, hairy, those on the stem and next the root alike in form and equally succulent. The flowers when open are about as large as a sixpence, with very round petals; they grow in many-flowered umbels, and expand in succession during the whole summer. Professor Morren speaks thus of its management in Belgium. Naturally an annual, the seeds are sown in sandy land early in the spring; this is best done where they have to stand, because such delicate plants do not bear well the operation of pricking out. A soil composed of sand, mixed with decayed vegetable matter, especially rotten leaves, is what suits it best. In order to have large fine

flowers, it is as well to give the plants a good watering once or twice during the summer with Guano water. In Belgium the seeds begin to ripen by July. It also makes a very nice pot-plant for sitting-rooms.—Figured in the *Annales de Gand*, t. 268. We believe this to be one of Messrs. Veitch's many importations, and quite concur with Professor Morren in saying that it is not so much known as it deserves to be, especially in gardens where beauty is in greater esteem than rarity.

CYPRIPEDIUM HAYNALDIANUM. A stove Orchid, from the Philippines, differing somewhat from the fine species C. Lowii, a well-known kind. Like all the Cypripediums from hot countries, this will require to be grown in a warm house; in addition to which the principal matters to be observed in their cultivation are, perfect drainage, as they need more water than some Orchids, with the peat in which they are potted of a less fibrous description than that used for Epiphytal Orchids; plenty of light, but thin shading material over them in bright weather, with a fair amount of air during the middle of the day in the growing season.

"Leaves distichous, six to ten inches long, one and a half inches broad, suberect, keeled, obtuse, and two-toothed at the tip. Scape solitary, twelve to eighteen inches high, two or more flowered, clothed with long, soft, spreading hairs. Bracts one to one and a quarter inches long. Flowers six to seven inches across, greenish-white, except the lower half of the upper sepal and petals, which are blotched with dark brown; upper halves faint rose and white; upper sepal suberect, oblong, obtuse, lower half with recurved margins, upper almost hooded. Petals twisted beyond the middle. Lip green, saccate, rounded at the base. Staminode two-lobed, green."—*Botanical Magazine*, 6296.

ADIANTUM NEOGUINEENSE. In this plant we have a welcome addition to our stove Ferns. Elegant in habit, and possessing the merit of not being too large for growers with limited accommodation—an objection that has with much reason been urged against a great many of the Ferns that have been introduced of late years. It was received by Mr. Williams, of the Holloway Nurseries, from Mr. Goldie, who discovered it in New Guinea. It will doubtless be a larger grower than A. æthiopicum, to which group of species it may be said to belong.

"Fronds spreading, glabrous, deltoid, tri-quadripinnata, pellucid membranaceous, dark olive-green, with a glaucous tinge on both surfaces. Pinnæ ovate; ultimate pinnules on very fine hair-like stalks, the terminal one cuneate, the lateral ones trapezoid, averaging about half an inch long, crenately lobed, the lobes rather large entire. Sori small, distinct, about six to eight to a pinnule, orbicular, entirely sunk in closed sinuses of the marginal lobes; the indusium smooth; veins flabellate, about four running into each sinus; stipes castaneous, smooth, glaucous; secondary and tertiary rachides very slender, hair-like."—*Gardener's Chronicle*, N.S., vol. vii., p. 12.

MICROSPERMA BARTONIODES. *Walpers* (*alias* Eucnide bartonioides, *Zuccarini*). A Loasad from Mexico. Introduced by Mr. Charlwood. A handsome hardy annual, with large bright yellow glittering flowers; the stems are covered with stiffish hairs.

"Stems about a foot long, flexuose, succulent, subtranslucent. Leaves ovate-acute, lobed, and serrated. Flower-stalks long, one-flowered, terminal. Petals ovate, or rather obovate, slightly serrated, sulphur-yellow, paler, almost white, beneath. Stamens very long, in five monadelphous fascicles. Its soft, succulent nature makes it liable to be injured by heavy rain and wind."—*Botanical Magazine*, t. 4491.

SPATHODEA SPECIOSA. *Brongniart*. Of uncertain origin—supposed African. A magnificent stove tree, belonging to the Bignoniads, with close panicles of very large pink, trumpet-shaped flowers, stained with crimson. Flowers in the spring.

"When this beautiful species blossomed at Ghent, it was about four feet high. The panicle appeared at the end of the stem, which was covered with pinnated leaves, seated in threes, each being furnished with oblong-lanceolate, acuminate, serrated, shining leaflets. The corolla is about two and a half inches long, and is protruded from an oblong blunt calyx, which opens on one side to let it pass, at the same time dividing into two triangular teeth at the back. Cultivated in a mixture of decayed leaves and rotten dung, mixed with one-third peat and one-third loam; it is represented to be difficult to strike. According to Professor Morren, it was originally received at Ghent from England."—*Annales de Gand*, t. 260.





[PLATE 3.]

DENDROBIUM SUPERBIENS.

An Intermediate, or Cool Stove Epiphyte, belonging to the Natural Order of ORCHIDS; *from* NORTH AUSTRALIA.

Specific Character.

DENDROBIUM SUPERBIENS.—"Somewhat resembling D. Bigibbum, but has not such an anterior gibbosity to the chin. It has numerous asperities over the lateral lobes of the lip; middle column consisting of five equal plates. Petals much different from D. Bigibbum, longer, and at once narrower. Colour bright purple."

Gardener's Chronicle, N.S., Vol. VI., p. 516.

THIS is the stoutest, most robust, erect-growing species of Dendrobium hitherto introduced, equally distinct in both its flowers and the general aspect of the plant. The flowers—which are of a beautiful purple colour, shaded from a bright to a deeper hue, are produced from the old imported bulbs in moderately dense, large, half-nodding spikes—possess not only a beauty of their own, but have a charming effect combined with other Orchids, from their affording a colour rare in the family, although somewhat approached by another Australian species—D. Bigibbum, a very much smaller growing plant. In the aspect of the plant this Dendrobium is much more like Cyrtopodium punctatum, a well-known species indigenous to both St. Domingo and Mexico, than to other members of the genus Dendrobium, having immensely stout, thick pseudo-bulbs, from two to two and a half feet in length, bearing equally stout, leathery leaves. Such was the character of the specimen from which our illustration was taken, and which flowered with Mr. B. S. Williams, at the Holloway Nurseries, in April, 1878. There appears to be another form of the plant previously imported by Messrs. Veitch, of much weaker growth in both the bulbs and leaves, yet alike in its erect habit; the flowers a somewhat darker shade in colour. One remarkable feature apparent in the Holloway plant was that in every case the flower-stems, after blooming, grew on, forming a young plant. This, as well known to cultivators of Orchids, is a very common occurrence with many Dendrobes, so far as young plants being formed from the joints, or nodes, of the bulbs that have not produced flowers; but in this the present subject differs in the flower-spike

growing on after the blooming is over. One great advantage from a cultural point of view that the plant possesses over the great majority of Dendrobiums is the enduring character of its flowers; we understood that the Holloway plants, several of which have bloomed, kept their flowers quite fresh for six or eight weeks—a property that much enhances the value of these, as all other cultivated plants. As we have already intimated, this is an Australian plant; and although those that have flowered have, we believe, been kept since their introduction in a temperature such as usually is given to Orchids that are found to succeed with a moderate amount of artificial heat, yet we very much doubt if this will be found the right treatment; for although under such conditions the old pseudo-bulbs grown and matured in their native country will no doubt produce flowers, this is a very different thing from the formation of new growth such as is calculated to produce flowers in the quantity natural to the plant. Most of the species from the same country will grow freely enough in the close moist atmosphere of our Orchid-houses, forming leaves and bulbs even larger than in their native habitats; but grown under such conditions, they lack the solidity in texture indispensable to the free formation and development of flowers. It is not through an excess of heat they receive when so managed that is the cause of their being wanting in flowering capabilities, but the over-humid atmosphere, with insufficient light and air, that thus enfeebles them. We think a warm greenhouse, with less atmospheric moisture, more air, and still more light during the growing season, with comparatively cool dry quarters when at rest, will be more in keeping with its requirements. In respect to soil, it will doubtless do well in such material as is found to answer for the generality of its now numerous congeners, for which well-drained pots, with a mixture of good fibrous peat—having most of the earthy matter removed—to which is added a little chopped sphagnum, broken crocks, and a sprinkling of sand, are found suitable. It must have sufficient moisture at the roots whilst the growing season lasts, and be kept all but dry through the dormant period.



[PLATE 4.]

THE WHITE CUNNINGHAM RHODODENDRON.

(RHODODENDRON CINNAMOMEUM ; VAR. CUNNINGHAMI.)

A Hardy Evergreen Hybrid Shrub. R. cinnamomeum ♂, maximum ♀.

FOR the figure of this noble shrub we are indebted to Mr. George Cunningham, of the Nursery, Liverpool. It is probably the best hybrid Rhododendron yet raised, not possessing, indeed, the rich colours of the crimson mules, but quite as valuable to the cultivator on account of its large heads of pure white, spotted blossoms. The history of the plant is thus given by Mr. Cunningham in his correspondence :—

"It was raised between Cinnamomeum and a late White Maximum, as you will at once see by the foliage. It is very remarkable for its strong ribbed leaf and brown under-surface. The white of the flower is very pure, and the dark purple spots contrast with it very beautifully. It is quite hardy, its maternal parent being the latest and hardiest of all our Rhododendrons, and Cinnamomeum, the father, will stand any severity of an English winter in January, but as it pushes early in the spring, it is liable to be cut by our late frosts.

"The object which I had in view in hybridising R. cinnamomeum with a pure White Maximum was to improve the colour of each parent, keeping the purple spots of the former, and getting a later period of flowering from the latter. In this part of the kingdom the flowers from the hybrids with the Indian species and Ponticum, or Catawbiense, are in three seasons out of four destroyed by late frosts; the colour also of those between the true Scarlet Arboreum and the pink and purple species is diluted, and that between them and Cinnamomeum, or the White Arboreum, is often of a *muddy* pink, turning, as the flower gets old, into a dirty white. In the one I have sent you to figure, these objects have been obtained—the white colour has been preserved in all its purity, and a perfect hardiness also acquired. None of my plants of it have had any protection."

In form the leaves are exactly intermediate between the two parents. To the shape of the Cinnamon Tree Rhododendron they add the convexity of R. maximum; and the downy surface of the under side is just half-way between the two. In both the mule and its ♀ parent, the hairiness consists of numerous much entangled tubes, blunt, transparent,

flat, thin-sided, and very often arranged in a starry manner. They are evidently the beginning of the raments (?) of Bejaria.

In one respect both leaves and stem are unlike either parent. The latter is of a rich crimson brown, and the former are covered with an abundant resinous secretion, which renders them sticky to the touch.

THE VERVAENE RHODODENDRON.

Although derived from a different source, and much less interesting than the preceding, the variety published by M. Van Houtte under the name of *Rhododendron ponticum*, var. *Vervaeneanum, flore pleno*, deserves mention in this place. It was no hybrid, but was an accidental seedling obtained by a M. Vervaene, "dont les heureuses tentatives de semis ont doté l'horticulture de cette riche acquisition," from *Rhododendron ponticum*. According to M. Van Houtte, it is no less remarkable for the elegance of its habit, than for the abundance of its flowers, the great breadth of its heads and of its corolla, and for its delicate tints. His very fine figure represents it as forming a head about as large as that shown in the annexed plate; the flowers measure full three inches in diameter, are semi-double, of a rich lilac colour, with the upper lip white, spotted with yellow. See *Flore des Serres*, tt. 492, 493.

GLEANINGS AND ORIGINAL MEMORANDA.

CALANTHE SYLVATICA. *Lindley*. A beautiful terrestrial stove Orchid, with long erect spikes of large flowers, at first white, but changing to bright yellow. From the Isles of France and Bourbon.

This is the most beautiful of all the species of Calanthe. To the foliage and general habit of the White Hellebore-leaved (*Calanthe veratrifolia*), it adds far finer flowers, which are at first pure white, but by degrees change to a clear bright yellow, very different from the livery of death. Thus, each spike of flowers resembles a massive plume, the upper part of which is snow-white, the lowest very yellow, while in the middle the one colour insensibly passes into the other through a tender cream-coloured tint.



9

ANGRÆCUM VIRENS. *Lindley* in *Botanical Register*, 1847, under t. 19. A showy white-flowered orchidaceous epiphyte, from Bourbon. Blossomed in the Garden of Plants, at Paris, under the care of Monsieur Houllett. (Figs. 9 & 10.)

The sepals and petals, and the spur of the lip are greenish, and the lip itself, although white, is nevertheless conspicuously tinged with green in the middle. It is, however, a noble-looking plant, richly deserving a place among even the most select collections.

ODONTOGLOSSUM RUBESCENS. *Lindley*. From Nicaragua, imported by Mr. Skinner. A very handsome Orchid, with fine blush flowers spotted with crimson. Flowers in November.

"A charming species, belonging to the beautiful white-lipped section of the genus, and remarkable among them for its flowers being suffused

with a tender blush colour. The sepals are very straight and sharp-pointed, richly spotted with crimson. The petals have similar spots near their base ; the lip is spotless, crisp, and cordate, but not ciliated."—*Journ. Hort. Soc.*, vol. v., p. 35.

PENTSTEMON CORDIFOLIUS. *Bentham.* A hardy shrub, of the order of Linariads. Flowers rich dull red, in long bunches, rather handsome. From California. Flowers in the summer and autumn.

"A downy-stemmed half-shrubby plant, with a trailing or spreading habit, so that it is well suited to hang down over stones or rocks. Leaves dark green, shining, cordate, serrate, slightly downy. Flowers in one-sided, narrow, leafy panicles, which sometimes measure more than a foot in length. The branches of the panicle are hairy, and bear each from three to five flowers when the plants are vigorous. Calyx covered with glandular hairs ; corolla not quite an inch and a half long, rich dull red ; the tube almost cylindrical ; the upper lip straight, nearly flat, slightly two-lobed ; the lower three-parted, spreading at right angles to the upper. Hardy, grows in any good rich garden soil, and easily increases by seeds or cuttings. It flowers freely, one year from seeds, and lasts in flower from June to October. It is a very desirable plant."—*Journ. Hort. Soc.*, vol. v., p. 87. *With a figure.*



10

SPATHOGLOTTIS AUREA. *Lindley.* From Malacca. A pretty terrestrial stove plant, belonging to the natural order of Orchids, flowering in November. Flowers yellow. Introduced by Messrs. Veitch and Son.

"Rather handsome, with narrow leaves like those of a Phaius, and a scape two feet high, bearing at the very end about half a dozen large golden-yellow flowers, with a few dull sanguine spots on the lip. Mr. T. Lobb found it on Mount Ophir, near the beautiful Nepenthes sanguinea. According to a memorandum by the late Mr. Griffith, it inhabits rocks on Mount Ophir, at places called Goonong, Toondook, and Laydang."—*Journ. Hort. Soc.*, vol. v., p. 34.

PASSIFLORA BELOTTII, *of the French Gardens.* A hybrid stove plant of uncertain origin ; apparently between P. cærulea and quadrangularis. Introduced by Messrs. Knight and Perry.

"A robust shrub. Stems round. Leaves large, glabrous, deeply three-lobed, the lobes acuminate, or ovato-acuminate, entire. Flowers large and showy ; sepals flesh-coloured, tinged with green ; petals delicate light rose colour ; rays of the coronet blue, with indistinct purple transverse bars."—*Gardeners' Magazine of Botany.*

SACCOLABIUM HENDERSONIANUM. A stove epiphyte from Borneo. A finely-coloured flower, not common in Orchids, that of the sepals and petals approaching the shade of Mesospinidium Vulcanicum. On each sepal near the base is a purple spot. The body of the flower purple. The plant was, we believe, first flowered by Messrs. Henderson, of the Wellington and Pine-apple Nurseries. It will require similar treatment to the other Bornean species, which all bear a strong heat with plenty of shade and moisture when growing.

"Leaves five or six inches in length, oblong-ligulate, bilobed at the extremities. Flower-spike splendid and very dense. Lip small. Spur large, oblong-obtuse, two small side auriculæ."—*Gardener's Chronicle*, N.S., vol. iv., p. 356.

ECHITES PELTATA. *Vellozo.* A fine climbing stove plant of the order of Dogbanes (*Apocynaceæ*), imported from Brazil by Mons. H. Galeotti, and flowered with M. Van Houtte of Ghent. Leaves large, thick, massive. Flowers large, bright yellow, clustered. (Fig. 11.)

"A native of hedges near Rio Janeiro, where it grows to a considerable length. Leaves broad, rounded at the end, but with a point there, when young, covered with rusty down; when full grown, five to six inches long, and three and a half to seven and a half broad. The flowers grow in clusters of six or eight, with short downy stalks. The corolla, which is a clear bright—but not dark—yellow, is rather more than two inches long, twice contracted in the tube, and with five very much imbricated, broad somewhat crisp segments; the tube is white (but is coloured yellow in the plate). It requires a damp stove, strong loam mixed with white sand, and a thorough drainage."—*Van Houtte's Flore*, t. 390.

CLEMATIS INDIVISA; *variety* lobata, *Hooker.* A beautiful greenhouse climbing plant from New Zealand. Flowers large, pure white, with crimson anthers. Flowers in April. (Fig. 12.)

"In its native country it quite festoons the trees with its dense foliage and large panicles of flowers. A climber, with ternate leaves, and firm, leathery leaflets, slightly downy, and coarsely lobed, or almost pinnatifid. The panicles are often a foot long; those in gardens have only hitherto produced small flowers, which measure full two and a half inches across; whether fragrant or not is not stated."—*Botanical Magazine*, t. 4398.

LINUM GRANDIFLORUM. *Desfontaines.* A hardy annual from Algiers, with brilliant crimson flowers. In the French Gardens, flowers from July to October. (Fig. 13.)





"A glaucous erect annual, branching upwards. Ordinary leaves narrow, obtuse, closely packed; those of the stem ovate, acute, or acuminate, with some delicate fringes on the edge. Flowers of the colour of Portulaca Gilliesii, more than an inch across, with five whitish spaces in the eye. It flowers abundantly and in succession, and, being a dwarf plant, it answers remarkably well for borders."—*Revue Horticole*, vol. ii., p. 404.

ERIOCNEMA MARMORATUM. *Naudin.* A soft, herbaceous, stemless stove plant, from Brazil, belonging to the Melastomads. Leaves green, striped with white. Flowers rose-coloured, produced with Mons. Morel of Paris. (Fig. 14.)



"Stem very short, fleshy, resembling a tuber. Leaves hairy, oval, five-ribbed, stalked, oblong, heart-shaped, on the upper side bright green, beautifully marked with brown stains and broken streaks of white, on the under side rich purple. Flowering branches or scapes about five inches high, terminated by a bent short spike of rich rose-coloured blossoms, about as large as in Cyclamen coum, with five petals."—*Revue Horticole*, vol. ii., p. 381, Fig. 20.

ONCIDIUM SERRATUM. *Lindley.* A very striking, orchidaceous, half-twining epiphyte from Peru. Flowers large, brownish-olive, and brilliant yellow, produced with M. Pescatore of Paris. (Fig. 15. Rather more than twice the natural size.)

Till we received a flower of this curious species from M. Pescatore, it was only known to us from a rude copy of an old Spanish drawing, sent from Peru by the late Mr. Mathews, and preserved in Sir Wm. Hooker's Herbarium. The plant has oblong, smooth, terete pseudo-bulbs, each having two broad sword-shaped leaves at the point, and several others below the pseudo-bulbs. The flower-stem was nine feet long, partly twining, with five or six lateral branches, each carrying from four to six flowers near the extremity. These flowers have the very singular form shown in the annexed figure, which is about twice as large as they are represented in the Spanish drawing above alluded to, and perhaps four times as large as they were with M. Pescatore. The colour is said to be cinnamon-brown in Peru, with bright yellow tips to the upper divisions. In the fresh flower they had the colour of Oncidium luridum, only brighter; but the yellow on the upper half of the delicately fringed and crisped petals was clear and brilliant. If flowered in the summer, the species would no doubt be much finer; as it is, we must regard it as one of the most remarkable of the short-lipped Oncids.

LÆLIA DAYANA.

"A very fine stove epiphyte, from Brazil, named in compliment to Mr. Day, in whose noted collection it flowered. It is in the way of L. pumila, but has a good deal of purple colouring in it."—*Gardener's Chronicle*, N.S., vol. vi., p. 772.

LÆLIA MYLAMIANA. This is a garden hybrid, raised by Messrs. W. Rollisson and Sons, at the Tooting Nurseries. It is, we understand, a cross resulting from impregnating the flowers of Cattleya Granulosa with the pollen of Lælia Crispa.

"Pseudo-bulbs, stout, cylindrical, over a foot in length; some bearing, like the female parent, a pair of leaves; others, like the male, a single leaf. In the latter case the leaves are like those of the Lælia, long and stout; in the former, as in the female parent, ovate, obtuse, and eight inches long, and two and a half broad. Lip coloured like Lælia Crispa. Petals and sepals nearly like those of Lælia Elegans."—*Gardener's Chronicle*, N.S., vol. vi., p. 740.



LARDIZABALA BITERNATA. *Ruiz et Pavon.* A hardy evergreen climbing shrub from Chili, belonging to the order of Lardizabalads. Leaves in threes, prickly at the edge. Flowers dark purple, in close drooping racemes, appearing in December. Introduced by Messrs. Veitch and Co. (Fig. 18.)

"A climbing shrub, with terete, twisted branches. Leaves, especially in the flowering branches, generally simple, ternate, but sometimes bi and triternate; leaflets rather thick, evergreen, ovate, here and there almost spinously twisted, dark green above, paler and reticulated beneath. Flowers in close drooping spikes, of numerous, rather large, deep purplish chocolate-coloured flowers. The calyx of the male of six rhombeo-ovate, spreading, fleshy, nearly equal sepals. Petals six, spreading, lanceolate, or almost subulate, white, mealy, membranaceous. Stamens six, united into a column and bearing six spreading, oblong, slightly incurved, apiculated, two-celled anthers, opening at the back. A native of woods in the south of Chili, and perfectly hardy."—*Botanical Magazine*, t. 4501.

TROPÆOLUM DECKERIANUM. *Moritz.* A downy, handsome, twining, greenhouse perennial, with blue, green, and scarlet flowers. Apparently very pretty. Introduced from Venezuela to the Botanic Garden, Berlin. (Fig. 16.)

"Roots fibrous. Stems grey, downy, climbing and rooting; with blunt, peltate, sinuated ovate leaves. The flowers, which grow singly, have a scarlet spur two inches long, tipped with green; green hairy sepals; five intensely blue, wedge-shaped, toothed, short petals; and stamens of the same colour. It may be grown out of doors in summer, or may be kept in a pot and trained like other small species of the genus. Propagated by cuttings or by seeds."—*Van Houtte's Flore des Serres*, t. 490. A very great acquisition, remarkable for the singular intermixture of green, scarlet, and blue in its flowers.



GONOLOBUS MARTIANUS. *Hooker* (*alias* Fischeria Martiana, *Decaisne*). A Brazilian stove twiner belonging to the Asclepiads, with many-flowered umbels of greenish-white flowers, possessing little beauty. Flowers at Kew in May and June. (Fig. 17.)

"Climbing, much-branched; branches densely clothed with spreading hairs, which become reddish in drying. Leaves oblong-ovate, hairy

on both sides, almost velvety, mucronate, cordate, with a deep but closed sinus. Flowers in many-flowered umbels with hairy pedicels, white, with a deep green radiating ring at the base; lobes spreading, ovate-rotundate-obtuse, longitudinally plaited in the middle. A soft-wooded plant, of rapid and extensive growth, well adapted to cover trellis-work, pillars, &c. Where it is required to cover a great space, it should be planted in a mixture of loam and peat, about eighteen inches in depth, and well drained. It may also be grown in a pot, and trained up the rafters of the house, or on a wire trellis fixed to the pot; and by occasionally stopping the leading shoots it may be made to flower abundantly." —*Botanical Magazine*, t. 4472.

MONARDELLA MACRANTHA. A half-hardy perennial from California. It is of a close dwarf habit of growth, highly aromatic; the flowers are bright orange-scarlet in colour. A handsome plant.

"Slender, cylindric, tufted stems, procumbent or ascending, more or less pubescent, or almost glabrate. Leaves small, half to three-quarters of an inch long, petioled, ovate, obtuse, quite entire; petiole shorter than the blade, spreading or recurved; bracteal leaves, sessile, membranaceous, and pubescent. Flowers ten to twenty in a close sessile terminal head; calyx half an inch long, striate, terete, tomentose. Corolla slender, scarlet; tube three times as long as the calyx; lobes oblong lanceolate; stamens exserted. Anthers small. Style slender. Stigma bifid."—*Botanical Magazine*, 6270.

CROCUS CHRYSANTHUS, VAR. FUSCOTINCTUS. This is an interesting plant, brought from Asia Minor by Mr. Elwes.

"It has a corm like that of C. biflorus, four to five narrow, distinctly vittate leaves; two lanceolate, much imbricated spathe-valves; a protruded tube, a couple of inches long, dull white, with brown stripes. Deep orange limb an inch deep, the outer segments broadly suffused with sepia-brown all down the back; the three inner ones smaller, and tinged with brown at the throat."—*Gardener's Chronicle*, N.S., vol. v., p. 622.

PRITCHARDIA GRANDIS. This plant has been introduced by Mr. Bull, of King's Road, Chelsea, from the South Sea Islands. But the name must only be taken as provisional, as the plant is not yet in a condition to identify.

It is undoubtedly the grandest of all the fan-leaved palms that do not exceed a small or medium growth. It has attained a height of five or six feet. The stem is somewhat angular, and surrounded by a network of fibres, as in the case of some others of the family. The leaves are nearly orbicular, very symmetrical; the margin is regularly divided, but not very deeply, into moderate-sized oblong lobes, notched. The petiole is proportionate in length to that of the blade, which it supports almost erect whilst young; as they get older, the entire leaf assumes a more drooping position; the upper surface of the leaf is a beautiful dark green, quite smooth, the under surface paler in colour. It is a plant that at once strikes the beholder as totally distinct from everything we have hitherto seen; and when sufficiently plentiful to be obtainable, will no doubt be eagerly sought after by all growers of Palms, no collection of which can be said to be complete without it. It will require a warm stove to grow it, with peaty soil, well drained, and abundance of water during the growing season.

ARALIA ELEGANTISSIMA.

"A very elegant evergreen stove plant, with an erect slender stem, well furnished with digitate leaves, on long dark-green foot-stalks, mottled with white. The surface of the leaves is deep green, the midrib of each leaflet being white; the filiform leaflets are pendulous, and add much to its beauty. It is a very effective decorative subject, from the South Sea Islands, and consequently will require a strong heat in which to be grown."—*Bull's Catalogue*, 1876.

THERESIA PERSICA. *C. Koch*. A hardy Liliaceous plant from Mount Ararat, where it is found at the elevation of 4,000 feet. It is said to have the flowers of the same form as in Fritillaria, but the habit of a Lily.

This is described as having a bell-shaped, hexapetaloid flower, with oblong coloured sepals, provided with a nectariferous cavity in the inside; six hypogynous stamens included within the flower; oval anthers, deeply pierced below to receive the filament; a five-celled, many-seeded, five-angular, columnar ovary; with a linear, entire style, and a scarcely distinguishable stigma. The bulbs are said to be like those of the Crown Imperial. It does not appear from the *Annales*

de Gand, whence this account is taken, whether the plant is in the Belgian gardens or not; its presence in a work treating on garden plants leads to the supposition that it is in cultivation, though Professor Morren does not say where.

STANHOPEA CIRRHATA. *Lindley.* A stove orchidaceous epiphyte, from Nicaragua, introduced by Mr. Skinner. (Fig. 19.)



"A few pseudo-bulbs of this remarkable plant were sold at one of Mr. Skinner's sales, having been collected in Nicaragua by Mr. Warcziewitz. A couple of specimens in spirits enable me to define it. Among Stanhopeas it is unique, for the flowers being absolutely solitary, not in spathaceous spikes, and for the column being wingless, and extended into a pair of feelers like some Odontoglossums. Its lateral horns, too, are extremely short and fleshy."—*Journ. Hort. Soc.*, vol. v., p. 37.

STANHOPEA ECORNUTA. *C. Lemaire.* A stove orchidaceous epiphyte, from Central America, whence it was sent to Mr. Van Houtte by Mr. Warcziewitz. Flowers white, with the base of the lip yellow. (Fig. 20.)

This extremely curious plant differs from all the previously known Stanhopeas, in having a lip wholly free from horns, and without any break in its middle. It may be regarded as a species with the hypochil (or lower half of the lip) alone present. This body is described as being "ovate, obsoletely triangular at the end, very short. It has much the form of a slipper, extremely fleshy, of a very bright yellow-orange colour, passing towards the point into pure white, and mottled on its sides with handsome purple blotches. Four little tumours, two near the articulation with the column, and two near the point, indicate four abortive horns." The flowers are otherwise pure white, with a few purple spots near the base of the petals, which are short, firm, concave, and not reflexed, as in most other Stanhopeas. "The column is very short, very fleshy, compressed, rounded above, winged at the sides, channelled in front." "The flowers, which grow in pairs, are about four and a half inches across, and have very short bracts."—*Van Houtte's Flore*, t. 181.

STANHOPEA TRICORNIS. *Lindley.* An orchidaceous epiphyte, from Western Peru. (Fig. 21.)

'A very curious thing. The figure of the lip is most remarkable, there being a third horn at the base of the middle lobe of the lip in addition to the two always present at the side. In a figure sent home by Mr. Warcziewitz the petals are represented to be pink and the rest of the flower white; the petals, moreover, are very fleshy, firm, and apparently incapable of rolling back as in the rest of the genus."—*Journ. of Hort. Soc.* iv. Fig. 21*a* represents a portion of the lip.

PULTENÆA ROSEA. Hard-wooded greenhouse flowering plants of any value now make their appearance at long intervals only. Consequently, this will be welcomed amongst

lovers of these handsome effective subjects. It appears to be of a moderately close, compact, yet graceful habit, producing a quantity of thin, twiggy shoots, from the points of which are produced freely its pea-shaped flowers, forming small, compact heads, in colour bright rose suffused with lilac. It was, we believe, found growing at an elevation of 5,000 feet on Mount William, in the Grampians of Victoria, and consequently will require nothing more than ordinary greenhouse treatment, with the usual peaty soil, with a moderate amount of sand added.

"An erect heath-like shrub, the branches virgate, glabrous, or sprinkled with a few hairs. Leaves linear-terete, obtuse, or with short callous points under half an inch long, channelled above by the involute margins, slightly scabrous. Stipules subulate-pointed. Flowers pink in terminal heads, sessile within the last leaves. Bracts few, narrow, trifid. Bracteoles inserted under the calyx, linear-lanceolate. Calyx silky, pubescent, two and a half lines long. Lobes lanceolate, as long as the tube; the two upper ones more united. Petals nearly of equal length, not twice as long as the calyx. Ovary villous. Style subulate. Pod two lines long, acuminate."—*Gardener's Chronicle*, N.S., vol. vii., p. 431.

Masdevallia Harryana.

Undoubtedly one of the very finest of this most beautiful genus of Orchids, producing flowers unequalled in colour and their peculiar lustre, which we do not recollect to have seen equalled in anything else. The colour is of the richest magenta possible to describe. The whole upper surface of broad enlarged sepals is covered with a glossy sheen that without seeing it would be difficult to realise. The individual flowers are about the size of M. Lindenii, another fine kind. The plant possesses a compact dwarf habit of growth, similar to the majority of the other well-known species. Their cultivation is very simple; they should never, even when at rest, be allowed to get so dry at the roots as many Orchids. When growing they need an abundance of water, plenty of drainage, soil fibrous peat, intermixed with sphagnum, crocks, and sand. A minimum temperature of 45° in the winter should be the lowest, and in summer they ought to be kept as cool as can be done, without the admission of so much air as would dry up the atmosphere of the house. A lean-to house at this season, with a northern aspect, suits them well.

Warrea Candida (*alias* Huntleya candida, *Hort.*).

An orchidaceous epiphyte from Bahia, with handsome purple and white flowers. Introduced by M. Morel of Paris, flowered with M. Pescatore in Feb., 1850. (Fig. 22 magnified.)



W. candida; foliis latoligulatis apice recurvis floribus 2-3, sepalis petalisque ovalibus acutissimis, labello subquadrato apice angustiore retuso basi saccato angulato inflexo carnosissimo dente crasso tridentato in medio et altero simplici acuminato utrinque plicisque 3 parvis in faciem superiorem.

The accompanying figure represents a flower of this plant about four times the natural size. M. Pescatore, from whom we received it by post, states that he bought it from M. Morel, under the name of Huntleya Meleagris. M. Morel informs us that he imported it in 1848 from Bahia, his collector having found it about 150 leagues in the interior of that province. According to M. Luddemann, the director of M. Pescatore's garden at La Celle, the species is handsomer than Huntleya violacea. The flower is pure white, the centre of the lip purple, towards the edge blue-violet, at the base white, streaked with red. The plant is of small stature, the full-grown leaves not being more than nine inches long. The flowers grow three together, in the same manner as in the Huntleyas. It seems to be a nice plant, in the way of Warrea Wailesiana.



[PLATE 5.]

BORONIA ELATIOR.

A Beautiful, Elegant Habited, Hard-Wooded Greenhouse Flowering Plant, from SOUTH-WEST AUSTRALIA, *belonging to the Order* RUTACEÆ.

Specific Character.

BORONIA ELATIOR.—"A slender twiggy erect shrub, four to five feet high, much branched. Stem and branches more or less clothed with long, soft, rather distinct spreading hairs. Leaves close-set, uniform, and rather distichous on the flowering branches, one to two inches long, by half to three-quarters of an inch broad, pinnate; rachis slightly dilated between the pinnæ, which are two to six pairs, with an odd one between, sessile, linear acuminate, flat, quite entire. Flowers very numerous on the branches, drooping, shortly peduncled. Sepals broadly ovate, acuminate. Corolla reddish-purple, nearly globose. Petals nearly orbicular, apiculate, much imbricated. Stamens and filaments very short, subulate; those opposite the sepals with small yellow anthers, placed under the stigma lobes, then alternate with large black anthers. Ovary pubescent, hid under the obtusely pyramidal stigma, which is four-lobed at the base."

Botanical Magazine, 6285.

IN this we have one of the finest amongst a most beautiful genus of hard-wooded greenhouse plants, equally remarkable for its elegant habit of growth and its disposition to flower profusely. Like the other species in cultivation, it blooms in the spring, but apparently is not so early in opening its flowers as some, for instance, B. pinnata, another fine kind, to which the present subject affords a pleasing contrast. The flowers are produced at the axils of the leaves, over the greater portion of the entire length of the preceding summer's shoots, forming pendent floral cords, to which its thin flexible shoots may be likened. The flowers are of a reddish-purple hue, and their ability to endure long upon the plant in a fresh condition is a matter deserving of being taken into account in all plants grown for decorative purposes. Another attribute that this Boronia has, which commends it to those with limited greenhouse accommodation, is that it blooms equally freely in a small as in a large state: young examples in six or eight inch pots bloom so as to form perfect wreaths of flowers. This species is easily grown, but, like several of the best amongst the other favourite kinds, there are a few essentials in its cultivation that require attention to ensure the full measure of success, particulars of which will assist the inexperienced. Boronias thrive best in peaty soil of a rich nature, not close, hard, and very

black in colour, such as is frequently used for the hardest-wooded section of Ericas, but full of fibre; they are free-rooting subjects, requiring the soil to be kept—especially during the growing season—a little moister than some things indigenous to the same country. They will also bear more pot-room whilst young than some other greenhouse shrubs. This collectively points to the necessity, not only for thorough drainage of the pots, but also to a liberal admixture of sand amongst the soil, to admit of the water percolating freely through it. These plants are somewhat subject to the attacks of mildew through the winter and spring, and unless this is sought after, and destroyed by the application of flowers of sulphur or some of the remedies used for the destruction of this parasite, it will quickly reduce the leaves to a condition that will cause their falling off in a green state—an occurrence that seriously injures the plants. To render them less liable to the presence of the parasite, they should each summer, about the beginning of August, be stood out of doors in the open air for a month or so, which will not only cause the leaves to get better matured, but will also tend to promote a greater disposition to flower.

It is one of the importations of Messrs. Veitch, of Chelsea, in whose collection the subject of our illustration flowered.





PLATE 6.]

DRUMMOND'S SIDE-SADDLE FLOWER.

(SARRACENIA DRUMMONDII.)

A Stove Marsh Plant, from FLORIDA, *belonging to the Natural Order of* SARRACENIADS.

Specific Character.

DRUMMOND'S SIDE-SADDLE FLOWER.—"Pitchers long, straight, dilated upwards, angular, tapering much to the base; furnished with a sharp projecting rib in front, with an undulating inflexed roundish blade, which is covered with long hairs in the inside. Flowers purple."

Sarracenia Drummondii. *Croom's Observations on the genus Sarracenia*, No. 3, *with a plate, in the "Annals of the Lyceum of Natural History of New York,"* vol. iv.

THIS plant was, we believe, originally introduced by the late Mr. Drummond, who met with it in Florida, near the town of Appalachicola. It has since been found abundantly, by Dr. Chapman, on the western borders of the river of the same name, below Ocheesee. It, therefore, inhabits the swamps of a region which, during summer, experiences a tropical heat, as is in some measure indicated by the presence of orchidaceous epiphytes, such as Epidendrum Magnoliæ and tampense.

The pitchers of this plant are from eighteen inches to two and a half feet long, perfectly erect and straight, with very much the form of a postman's horn. Their colour is of the most vivid green, except at the upper expanded end, where they are brilliantly variegated with white, red, and green. The rim of the orifice of the pitchers is slightly folded back, from the front towards the back, where it expands into a broad roundish arched cover, much undulated and crisped. In the inside this cover is clothed with long hairs, which partially disappear towards the entrance of the pitcher, at which point there is a considerable exudation of sweet viscid matter, apparently secreted by the hairs which exist there. The flower is of a dingy purple colour, roundish, about two and a half inches in diameter, with five blunt acuminate sepals, five obovate inflexed petals, and a pale-green dilated five-angled membranous stigma, which is nearly as long as the flower itself; each angle is divided into two short lobes, beneath which, in a fold, lies the real stigmatic surface. These flowers have little beauty, and are by no means the object of the gardener's care.

The so-called pitchers are in reality the leaves of this plant, in a very singular condition; the pitcher itself being the leaf-stalk, and the cover its blade. By what mode of development this kind of structure is produced has never yet been conclusively shown. It has been thought that the pitcher is formed by the folding together, in its earliest infancy, of the two sides of a flat leaf-stalk, the line of which union is indicated by a firm elevated rib, which proceeds from the base to the opening of the pitcher, as if to stiffen and sustain it; but this is not certain, and it is more probable that the pitcher is the result of a hollowing process, coeval with the first growth of the pitcher itself, and analogous to that which produces the hip of the rose, or the cup at the bottom of the calyx of Eschscholtzia, or the cups that appear accidentally upon cabbage-leaves.

If the exact nature of the pitcher is thus undecided, we are still further from a knowledge of the use for which so singular an apparatus is destined. To the common idea, that Nature intended it to hold water, arise these objections: that water is not found in the pitcher except after rains or heavy dews, and that plants which grow naturally in bogs can hardly require any unusual apparatus for supplying them with water. Others think that the pitcher is a contrivance for detaining insects in captivity till they perish and decay, the putrefaction of these creatures conducing to the nutrition of the plant. But there is no apparent reason why the Side-Saddle flower should require this sort of special nutriment more than its neighbours in the same bogs, which have no pitchers. This, however, is certain, that if the pitchers were intended for fly-traps, they could hardly have been more ingeniously contrived. It is the honey of the mouth of the pitcher that tempts the insects to their destruction; and, accordingly, they are found in abundance at the bottom. In the plant now before us we count, in the month of February, about a dozen, two of which are wasps; and Mr. Croom says that he found in one of his a large butterfly (*Papilio Turnus*). Reversed hairs keep them there without hope of escape. As the sides of the pitchers consist of very lax cellular tissue, containing large cavities in every direction, and as starch-grains in abundance escape from the sides when wounded, it is a question whether this starch, converted into sugar by the vital force of the pitcher, may not serve to sweeten the water in which the imprisoned insects meet a miserable end.



GLEANINGS AND ORIGINAL MEMORANDA.

FUCHSIA NIGRICANS. *Linden.* A greenhouse shrub, with purple and rose-coloured flowers, from the mountains of Central America. Introduced by Mr. Linden. (Fig. 23.)

"Nearly allied to F. triphylla. Leaves placed in whorls of three, or occasionally opposite, pendulous flowers in leafy bunches at the end of the branches, and petals not rolled up when in bud, associate this with F. loxensis and others inhabiting the chain of the Andes from N. Granada to Peru. The present species was collected in the cold region of the province of Merida, at the heights of 2,270 to 2,600 yards, growing in damp shady ravines, and flowering from May to November. Covered all over with slight grey down. Leaves in threes, short-stalked, and acuminate, somewhat glandular at the edge. Flowers solitary in the axils of the leaves. Calyx rose-coloured, downy inside. Petals flat, deep violet, with a few scattered hairs at the back, lanceolate, acute, as long as the lobes of the calyx."—*Van Houtte's Flore*, t. 481.

A pretty species, although inferior to some now in cultivation.

LAGETTA LINTEARIA. *Lamarck* (*alias* Daphne Lagetto, *Swartz*). A curious stove tree, of little beauty, with oblong grey leaves, and erect racemes of naked pitcher-shaped pale yellow flowers. Belongs to the Daphnads. Received from Jamaica at Kew, where it flowers in the summer and autumn. (Fig. 24.)

"The liber, or inner bark, of this tree consists of layers of reticulated fibre, exactly resembling well-prepared lace; and its nature is best exhibited by taking a truncheon from a branch, tearing down the bark, and separating it by the hand into as many layers as that portion of the tree is years old. 'The ladies of Jamaica,' Dr. Lunan observes, 'are extremely dextrous in making caps, ruffles, and complete suits of lace with it. In order to bleach it, after being drawn out as much as it will bear, they expose it (stretched) to the sunshine, and sprinkle it frequently with water. It bears washing extremely well with common soap, or the "curatoe" soap, and acquires a degree of whiteness equal to the best artificial lace. The wild negroes have made apparel with it of a very durable nature, but the common use to which it is applied is rope-making.' A tree from twenty to thirty feet high, with branches too straggling and foliage too thin to form a striking object, though really of a good size, glossy and handsome when in flower. Leaves alternate, on rather

short petioles, which are jointed on the branch, hence the leaves readily fall off in drying: they are heartshaped-ovate, acute, reticulated, palish green. Flowers pure white, or, in bud, greenish-white, arranged in spikes which are solitary and terminal on a main branch, or on short side branches. In growing it at Kew we have made use of good yellow loam, mixed with a little leaf mould and sand. In this it has attained the height of eight feet, and continues in a perfectly healthy state."—*Botanical Magazine*, t. 4502.

EPACRIS ONOSMÆFLORA FLORE-PLENO. A greenhouse evergreen shrub, introduced by Mr. Bull, from Australia.

Bearing a profusion of double flowers, white in colour. They are produced over a considerable length of the preceding summer's shoots, at the base of each leaf, giving it a very charming appearance. It is of a somewhat erect rigid habit, and very suitable for general decorative purposes. Like the other better-known species, it is easily grown, requiring nothing more than ordinary greenhouse treatment. It blooms during the spring.

TIGRIDIA LUTEA. This is a half-hardy plant belonging to the natural order Iridaceæ, and is indigenous to Peru and Chili; not equal for the general effect of its flowers to the old but most beautiful T. Pavonia, but, nevertheless, a handsome flower. It bloomed with Mr. Elwes, at Cirencester.

"Bulb ovoid. Stem terete, about a foot long, bearing three or four distinctly superposed leaves, and a single terminal head of flowers. Leaves sessile, linear, acuminate, four to six inches long, a quarter of an inch broad, bright green, strongly plicate, glabrous. Spathe one and a half to two inches long. Two to four flowered, opening in succession on different days. Pedicels as long as the spathe. Ovary oblong. Perianth yellow, very fugative, an inch and a half across. Segments forming a cup dotted with brown. Filaments united to the top in a cylindrical column. Anthers ligulate. Style-arms cut down nearly to the base into two hooked forks."—*Botanical Magazine*, 6295.

ABIES JEZOENSIS. *Siebold.* A magnificent evergreen coniferous tree from Japan. Introduced by Messrs. Standish and Co. Leaves of a brilliant green. (Fig. 25.)

According to Siebold, the Jezo Spruce is so called because it grows on the islands of Jezo and Krafto, in the empire of Japan, whence it has been introduced into the gardens of the wealthy inhabitants of Jedo. He describes it as a large tree, with a soft light wood, employed by the Japanese for arrows, and in the construction of domestic utensils. The leaves are said to remain for seven years upon the branches. The cones were unknown to him. He only saw the tree in flower in the month of June.

LIBERTIA PANICULATA. A greenhouse perennial, free-flowering and handsome. Raised from seeds received at Kew from New South Wales. Blooms in the spring.

"Root-stock short, terminated by a tuft of distichous glossy foliage. Leaves three-quarters to one foot long, by one-third to half an inch broad; narrow, linear, acuminate, nerved and keeled, margin quite entire. Stem or scape one to two feet high, slender, compressed, with or without a lanceolate-subulate leaf below the inflorescence. Panicle long, irregular; branches distinct, alternate, almost erect, with a sub-membranaceous erect sheathing, subulate lanceolate bract at the base of each. Flowers sub-umbellate; umbels with short broad membranaceous bracts; pedicels slender, lengthening after flowering, jointed under the flower. Perianth three-quarters of an inch diameter. Segment horizontal, narrowly oblong, obtuse, white. Filaments erect, slender, connate at the base. Anthers yellow. Ovary obovoid. Style short. Stigmas three, spreading horizontally, subulate tips, papillose; capsule nearly globose, membranous. Seeds numerous, small, angular."—*Botanical Magazine*, 6263.

ARTOCARPUS CANNONII. A stove shrub or tree, from the Society Islands.

A handsome plant, of free erect growth, that will no doubt attain a considerable size. The leaves appear to vary much in form; some are simple and cordate at the base, lobed irregularly more or less at the apex; others three-lobed at the apex, often deeply so, the centre one the largest. They are bronzy-crimson in colour, shaded with purple on the upper surface; beneath, bright red. Petioles pubescent, also red in colour. From the part of the world to which it is indigenous, there is not much chance of its succeeding without a warm house in which to grow, which somewhat detracts from its value.



ILEX CORNUTA. A fine, hardy, evergreen Holly; from the North of China. Introduced by Messrs. Standish and Co. (Fig. 26.)

I. cornuta; foliis oblongis coriaceis marginatis basi obtusis apice truncatis in plantâ vegetiore grossè sinuatodentatis spinosis in adultâ 3-cornibus integrisque, umbellis axillaribus sessilibus, baccis 4-pyrenis.

When Mr. Fortune was in China, in the service of the Horticultural Society, he found this in flower somewhere in the neighbourhood of Shanghae, in the month of April. During a subsequent visit to that country he again met with it, and in fruit, at a place called Kin-tang. It is a very remarkable plant, and promises to be, to English gardens, of much importance, on account of its hard, dark green, evergreen foliage and large berries. The leaves are almost always furnished with three strong spines at the end, but when the plant is young there are added one or two more on each side. In the old plant the latter wholly disappear, while the end spines will occasionally extend, turn up their edges, and assume the appearance of strong horns.

ILEX MICROCARPA. Another hardy evergreen Holly from the North of China. Introduced by Messrs. Standish and Co. (Fig. 27.)

I. microcarpa; foliis ovalibus integerrimis petiolatis utrinque acutis glabris, umbellis pedunculatis petiolo brevioribus, fructibus tetrapyrenis.

Concerning this new shrub we have no information beyond the statement that it was found at Tein-tung. The aspect of the plant is not unlike that of an evergreen oak, but the leaves are perfectly smooth on each side. The berries when ripe are very small, and appear to be unusually pulpy, for, on drying, they shrivel up, and leave the ribs of the four stones which they enclose quite apparent. It seems allied to Thunberg's Ilex rotunda.

AGAVE VICTORIÆ REGINÆ. A greenhouse succulent perennial, from Mexico. Amongst these quaint-looking very interesting plants, this stands out conspicuously as one of the most distinct of all that do not attain a large size. It, we believe, belongs to the same group as A. filifera. We understand the entire stock of it is in the hands of J. T. Peacock, Esq., of Sudbury House, Hammersmith, whose rich collection of these and kindred plants has attained a world-wide reputation, and by whom it was exhibited before the Floral Committee of the Royal Horticultural Society, who awarded it a first-class certificate, which it richly deserved.

"Leaves deep green, somewhat dorsally compressed, surface canaliculate, about six to eight inches long, one and a half wide at the gibbose base, from which they narrow upwards towards the acutely carinate point, terminating in a stout blackish-brown spine. The leaves are margined with a narrow band of white."—*Gardener's Chronicle*, N.S., vol. iv., p. 484 (*with Fig.*).

ADIANTUM PRINCEPS. A stove evergreen Fern, from New Granada. In this we have one of the finest species in the whole of the Adiantums, which undoubtedly represent the Fern family in a way second to none. It belongs to the same group as A. Tenerum; but fine as is that species, the present subject much surpasses it, particularly by its graceful drooping or pendent habit. It is a free grower, attaining a large size. A splendid subject alike for exhibition or general decorative purposes. No doubt the temperature of an intermediate house will answer best for it, as there is no class of plants that suffer more than Ferns if kept too hot.

"Stipe one foot, and lamina two feet in length. Frond broadest at the base, pendent, deltoid, quadripinnate. Pinnules large, upper corner obliquely overlying the rachis; terminal pinnule larger than the rest, sharply cuneate at the base. Sori one-eighth of an inch or more in length."—*Gardener's Chronicle*, N.S., vol. iv., p. 197.

CATTLEYA SPECTABILIS, of which there is a figure in the *Florist* (vol. iii., p. 92), is only a finely-blown specimen of C. pumila.

EUCHARIS CANDIDA. A stove bulb, imported by Mr. Bull from Colombia. The leaves are obovate, oblong, acuminate, cuneate at the base. The flowers are borne on an erect stem, thrown well up above the foliage, in an umbel, containing more or less in number, according to the strength of the plant. They are white in colour, and similar in character to the well-known E. Amazonica, but individually smaller, on which account, for the purpose of cutting, it will in many cases be preferred to E. Amazonica.

TRICHOPILIA SUAVIS. A delicious Orchid, of which a figure will appear in a number of this work.

T. suavis; pseudobulbis tenuibus obcordatis, foliis latis oblongis coriaceis, pedunculis bifloris, petalis linearibus rectiusculis, labello maximo bilobo undulato crispo basi arctè convoluto sursùm abruptè ventricoso.



[PLATE 7.]

ODONTOGLOSSUM VEXILLARIUM.

A Magnificent Stove Epiphyte, unsurpassed in beauty. From NEW GRANADA; *belonging to the Order of* ORCHIDS.

Specific Character.

ODONTOGLOSSUM VEXILLARIUM.—Pseudo-bulbs, one and a half to two and a half inches long, narrow, oblong, compressed. Leaves six to twelve inches long, by one and a half broad. Scapes several, sometimes six from one pseudo-bulb, very slender, longer than the leaves. Sheaths small, distant, appressed. Racemes many-flowered; flowers on slender pedicels; bracts a quarter of an inch long. Flowers much the largest of the genus; the largest four inches long; perianth quite flat; sepals sub-equal, obovate-oblong, or obovate cuneate, subacute, or truncate, flat, rather recurved, pale rose-coloured; petals larger or smaller than the sepals, and of the same shape, but usually more acute, of a deep rose-colour, with a lighter margin; lip quite flat, of one large almost round two-lobed limb, contracted into a claw at the base, and produced there into two ovate acute ascending bracts. There is a small two-lobed callus at the very base of the claw, close to the column, and three small ones at its distal end. The lip is white, suffused with deep rose-colour on the disc of each half, and pale yellow streaked with red on the claw. Column very short.

Botanical Magazine, 6037.

AMONGST the many fine Orchids introduced into Europe of late years, there are few, if any, that equal this, if we take into account the immense size and substance of the flowers, their exquisite colour, and the freedom with which they are produced. The individual blooms, from their wide massive character, may be said to be deficient in that elegance which characterises those Orchids that have the petalite and sepalite segments long, narrow, and somewhat elegantly twisted, as found in many others of the family of Odontoglots, of which the recently introduced beautiful O. cirrhosum may be taken as an example; yet the present plant possesses a beauty of its own. The gracefully curved racemes, having the appearance of almost being weighed down by the weight of their flowers, the labellum of which is conspicuous by its immense size. This Odontoglossum possesses to an extent that most desirable property, in Orchids, of the flowers collectively being fully proportionate in quantity to the size of the plant which produces them—a condition wanting in many; and, however beautiful, when the flowers are small in size, or deficient in numbers proportionate to the size of the plant, it detracts much from the general appearance. The leaves are of a pale-green colour, and it seems to be a remarkably

free grower, as small imported plants soon get established and grow rapidly; the yearly increase in the size of the bulbs, and their corresponding ability to produce an increased amount of flower, being greater than with most Orchids. Like many other species of the Odontoglot family, it is extremely variable in the colour and size of the flowers. Our illustration, taken from a specimen in the possession of Mr. B. S. Williams, Victoria Nurseries, Holloway—well known as one of the most successful cultivators of these plants in the kingdom—represents one of the largest-flowered finely-coloured forms yet produced. Many there are—bearing externally, so far as the plant goes, a very similar appearance to this—which produce a great deal smaller flowers, as well as much paler, some being so deficient in colour as to only possess a faint pink shade; and although these, in the absence of the finest varieties, would be considered fine things, still they suffer much by comparison with the large-flowered highly-coloured forms.

It is one of those species that may be described as requiring an intermediate temperature—something betwixt that needed by plants indigenous to hot regions, and that which suits cool Orchids. It succeeds best in a pot half filled with drainage material, the rest good fibrous peat, the earthy portion of which has been removed, mixed with one-fourth broken crocks or charcoal, and some chopped sphagnum. Like most of the other Odontoglots, this needs the soil keeping wetter during the growing season than many Orchids. It should have a thin shade, so as to diffuse the sun's rays rather than to obstruct the light, as this is the most important element to give strength and vigour to the plants, and without it is present in sufficient volume, whatever growth is made will be wanting in the solidity requisite to preserve them in a continued healthy condition, to still further effect which a fair amount of air should be given daily whilst the plants are in active growth; the atmosphere ought to be kept moderately charged with moisture, but not so much as is needed by plants that are natives of countries where, during the growing season, the air approaches saturation.

The plant appears to have been imported by several of the Continental introducers of new plants before any were procured alive. According to an account in the *Gardener's Chronicle*, it was first seen by the late Mr. Bowman, on the western slope of the Andes of New Granada, and afterwards living plants were sent home by Wallis, Roezl, and others.



THE DEEP BLOOD-COLOURED MOUTAN.
(MOUTAN OFFICINALIS ATROSANGUINEA.)



THE DEEP BLOOD-COLOURED MOUTAN.
(MOUTAN OFFICINALIS ATROSANGUINEA.)

[PLATE 8.]

THE DEEP BLOOD-COLOURED MOUTAN.

(MOUTAN OFFICINALIS; ATROSANGUINEA.)

A Hardy Undershrub, from CHINA, *belonging to the Natural Order of* CROWFOOTS.

Pæonia Moutan, atrosanguinea: *Journal of the Horticultural Society*, vol. iv., p. 225.

IT will probably be admitted, without any difference of opinion, that this is the finest of the Moutans introduced by the Horticultural Society. It is a plant with a vigorous growth, a deep green foliage tinged with red, and very large very double flowers, with dark blood-coloured petals, which are nearly as broad in the centre as at the edge. In foliage it is much like the common *Moutan papyracea*.

And now a word respecting the genus Moutan, which we propose to separate from Pæonia. We need not say that all the Moutans are furnished with a tough leathery coat, which is drawn tightly round the carpels, of which it allows nothing but the stigmas to project. This organ has no existence in PÆONIA, or in that part of it which one of us formerly proposed to call ONÆPIA, containing P. Brownii and another. It is of somewhat uncertain nature; wherefore it has received from different persons the names of Disk, Nectary, Perigynium, Paracorolla, &c. Upon this organ the genus MOUTAN is founded; and thus it differs from Pæonia as much as Ranunculus from Adonis, Actæa from Thalictrum, Trollius from Helleborus, all genera of the same order—that is to say, because of the presence of a part which does not appear in others.

Of the nature of this part there is little room for doubt. It is in all probability an innermost row of abortive stamens, the filaments of which are united into a cup, while the anthers refuse to appear; and therefore it is referable to that part of the flower which botanists now call disc. D. Don said he found anthers upon its edge, and if he was not mistaken, that would be conclusive as to its nature; but we have never been able to find anthers upon it, nor does it appear that any one except Mr. Don ever did.

In one of his interesting letters, Mr. Fortune gives the following account of the manner in which the Chinese propagate Moutans:—

"The propagation and management of the Moutan seem to be perfectly understood by the Chinese at Shanghae, much better than they are in England.

forming bushes ten or twelve feet high. It is very handsome where there is room for it, its long narrow sabre-shaped phyllodes (leaves) having a bright colour and firm texture, and bending downward gracefully from singularly flexuose branches. The inflorescence is similarly zig-zag, much shorter than the leaves, and often forms an entangled mass of branches each of which is terminated by a yellow head about as large as the seed of the Sweet Pea.

CEPHALOTAXUS FORTUNI. *Hooker.* A fine coniferous shrub, with long, narrow, deep-green distichous leaves; from the north of China. Introduced by Messrs. Standish of Bagshot. (Fig. 29.)

ONCIDIUM ELEGANTISSUM. An elegant species that has flowered with Messrs. Veitch. A native of Brazil.

Pseudo-bulbs, glaucous, short, broad, ribbed, two-leaved. Produces panicles of flowers very similar to O. Curtum, Lindl., but much more shining in colour. Lip short, as in O. Gardnerii, Lindl. Sepals brown, banded yellow. Petals broad, with a few yellow spots. Lip of the brightest yellow, as in O. Rogersii; the calli of the base with black purplish borders. The anterior limb of lip marbled and dotted with light brown. —*Gardener's Chronicle*, N.S., vol. vii., p. 13.

GALANTHUS PLICATUS. *Bieberstein.* A charming hardy bulb, from the Caucasus. Flowered in the Garden of the Horticultural Society in March, 1850.

This beautiful Snowdrop, although long cultivated in gardens, is hardly known to the public. There appears to be no doubt as to its specific difference from the common species, its leaves being very much broader, and, as it were, plaited, not flat, its flowers being larger, and the green on the petals far more conspicuous. In a horticultural point of view it is a much finer thing than the old Snowdrop, just as hardy, and as easily managed.—*Journ. Hort. Soc.*, Vol. v. p. 138. *With a figure.*

CEREUS TWEEDIEI. *Hooker.* An erect, round-stemmed, furrowed Cactus, covered with stiff spines, from among which arise handsome curved narrow orange tubular flowers, each almost 3 inches long. From Buenos Ayres by Messrs. Lee and Co. Flowered at Kew, in September, 1849.

About 1 foot to 1½ foot high, and 1 inch in diameter, of a very glaucous green hue, simple, but increasing readily by offsets at the base. The shape is cylindrical, very slightly tapering upwards, numbered with many, about sixteen, moderately deep furrows perfectly straight, the ridges obtuse and even (not tubercled). Spine-tufts on the ridges close together, oval, with brown wool. Spines many in each tuft, four or five stouter than the rest, white, blotched with brown; of the stout ones three or four (half to three-quarters of an inch long) are nearly erect; a solitary stout one together with the other lesser ones, which are white, generally, all point downwards. Flowers rich orange-crimson, numerous, from the side of the stem, 3 inches long, curved upwards, the mouth oblique. Calyx-tube funnel-shaped, the scales remote, subulate, oppressed, lower ones ciliated with white hairs. Petals small, scarcely longer than the teeth of the calyx, acute. Stamens lying against the upper side of the tube, and there much longer than the flower; lower ones scarcely protruded. Anthers deep purple.—*Botanical Magazine*, t. 4498. Will probably be a good breeder.

JUNIPERUS SPHÆRICA. An evergreen tree from the north of China. Introduced by Messrs. Standish and Noble. (Fig. 30.)

J. sphærica; arborea, foliis omnibus squamæformibus quadrifariis obtusis dorso foveâ circulari notatis, ramulis gracilibus tetragonis obtusis, galbulis sphæricis glaucis breviter pedunculatis.

Found in the north of China by Mr. Fortune, who describes it as a tree 30 to 50 feet in height. The young branches are four-cornered, blunt, and usually more slender than in the accompanying figure. All the leaves are minute, scaly, with a circular pit at their back. The fruit is quite round, about as large as the ball of a pocket pistol. The species differs from J. chinensis apparently, in not having any acicular leaves, and very decidedly in the size and form of its fruit, which is twice as large as in that species, and not at all depressed at the end, but very regularly spherical.

QUERCUS INVERSA. An evergreen Oak, from the north of China. Imported by Messrs. Standish and Noble. (Fig. 31.)

Q. inversa; sempervirens, ramis tomentosis, foliis coriaceis obovatis petiolatis cuspidatis obtusis nunc apice serratis supra glaberrimis subtus glauco-tomentosis, glandibus spicatis obovatis cupulâ brevi tomentosâ squamulosâ multò longioribus.



From specimens of this fine oak sent to Messrs. Standish and Noble by Mr. Fortune, we presume that it forms a tree with the habit of the Evergreen Oak. The leaves are deep green, covered with a short glaucous down on the under side, but quite smooth and shining on the upper; they are always contracted into a short blunt cusp at the point, where they are also sometimes serrated. The cups of the acorns are much like those of the Evergreen Oak, but the acorns are wider at the upper than at the lower end. The male flowers are produced at the ends of the same branches as carry the females, but are much more compactly arranged, forming long downy tails. The inflorescence consists of many such branches produced at the points of the shoots. The female flowers are tolerably regularly sessile in threes.

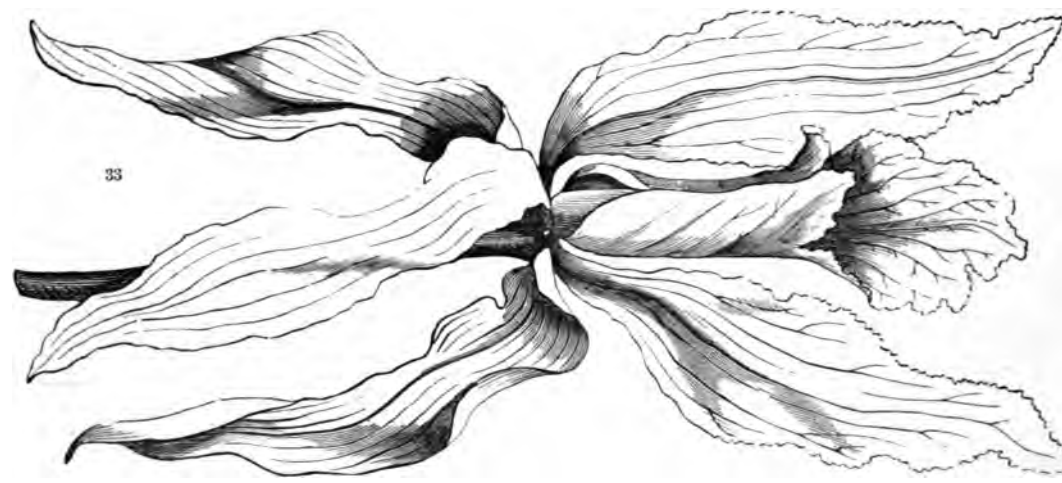
QUERCUS SCLEROPHYLLA. An evergreen Oak from the north of China, sent by Mr. Fortune to Messrs. Standish and Noble. (Fig. 32.)

Q. sclerophylla; sempervirens, ramis glabris, foliis petiolatis coriaceis glabris acuminatis obtusis ultra medium grossè serratis supra lævibus subtus glauco-pubescentibus, glandibus spicatis pubescentibus sphæricis paulo ultrà cupulam protrusis, cupulis tomentosis squamis elevatis quasi tuberculatis.

A much finer oak than the last, with a very peculiar aspect. Some of the leaves are six inches long and nearly three inches broad; their texture is that of a Spanish Chestnut, but thicker; their colour rich bright green on the upper side, and glaucous with fine down on

the under side. The spikes of the fruit are 3 or 4 inches long, very compact, with small downy acorns almost enclosed within very tomentose cups, the scales of which are large, distinct, and so much elevated as almost to give the cups the appearance of being covered with soft warts. A very fine thing.

LÆLIA GRANDIS. An Orchidaceous Epiphyte, with very large nankeen-coloured flowers. A native of Bahia. Flowered in May with M. Morel, of Paris. (Fig. 33.)



L. grandis; caule clavato monophyllo, folio coriaceo basi latius pedunculo bifloro basi spathaceo longiore, floribus subhorizontalibus, sepalis lanceolatis reflexis, petalis late-lanceolatis denticulato-crispis convexis labello parallelis et paulo longioribus, labello membranaceo venoso nudo undulato trilobo : laciniis lateralibus circa columnam convolutis et multo longioribus.

The accompanying Figure, the natural size, was taken from a flower received from Mons. Morel, along with a sketch of the leaf and stem. It is a plant with all the habit of a Cattleya, but the pollen-masses are 8, not 4. The stem appears to narrow to the base, as in Cattleya maxima ; the leaf is represented as being firm, stiff, and rather broader at the base than the point. The flowers grow in pairs, on a peduncle issuing from a spathe, as in the species just named. The sepals and petals are nankeen-coloured ; the lip white, washed with rose at the base in the inside, with purple veins, and a pure white border. The nearest affinity of this curious thing is with the Lælias Perrinii et majalis.

ENCEPHALARTOS HILDEBRANDII. A stately evergreen greenhouse plant from Zanzibar. These Encephalartos are fine additions to our subjects for permanent conservatory or warm greenhouse decoration, quite equal, when they have acquired sufficient length of stem to give them a tree-like character, to Tree-ferns, with this in their favour—that they do not so soon outgrow reasonable limits.

Leaves spreading, arched, with spiny edges. Stipes leafy to the base ; there clothed with cobweb-like hairs. Leaf-blade lanceolate, with numerous pairs of pinnæ, or lobes, lower ones diminishing into trifid scales, half an inch long. The larger segments lanceolate, with distinct marginal, and stronger and more crowded terminal teeth ; six or eight round the apex, with others distributed along each side.—*Bull's Catalogue*, 1877.

TULIPA UNDULATIFOLIA. A handsome-flowered hardy bulbous plant from Asia Minor, recently brought into cultivation in this country by Mr. Elwes. It is said to be found growing at an elevation of four to six thousand feet above the sea-level coast of Smyrna.

Bulb ovoid, an inch in diameter. Stem one-headed, about twelve inches long, glaucous, terete, obscurely downy. Leaves three or four, glabrous, glaucous ; the lower one lanceolate, acuminate, six or eight inches long, an inch to an inch and a quarter broad near the base. Peduncle four or five inches long. Perianth campanulate, erect, two inches long. Segments oblong-lanceolate, bright red on the face. Filaments black, linear, glabrous, three-eighths of an inch long. Anthers black, oblong, shorter than the filaments. Pollen yellow. Ovary clavate. Stigmas an eighth of an inch broad.—*Botanical Magazine*, 6307.

CYCNOCHES BARBATUM. *Lindley.* A very pretty orchidaceous epiphyte from Costa Rica, with long drooping hairy racemes of yellow flowers spotted with brown, and with a shaggy lip. Flowered with Mrs. Lawrence.

A singular and handsome plant, which appears almost to connect *Gongora* with this very sportive genus. A young plant scarcely exhibits a pseudo-bulb at all, only several imbricating, leafy scales terminated by an oblong-oval, acuminated, plaited leaf. When the leaf is fully developed the almost naked pseudo-bulb appears, ovate, compressed, green, smooth, with the withered scales at the base. Scape from the base of the pseudo-bulb, a foot long, dark purple, pubescent or hairy, jointed, sheathed with scales at the joints; this is terminated by a drooping many-flowered raceme, a foot long, of which the rachis and pedicel-like ovaries are dark purple, and hairy. Flowers moderately large, at first sight a good deal resembling those of *Gongora maculata*, but larger. Lip very hairy or bearded, hanging down, white tinged with yellow, and elegantly spotted with deep blood colour.—*Botanical Magazine*, t. 4479.

CODIÆUM (CROTON) PICTURATUS. A plant of most singular leaf-development; the whole are highly coloured. It presents one of those strange freaks of nature in the vegetable kingdom unaccountable as they are interesting. It is from the New Hebrides, and will no doubt, like the other known species, require a strong heat to grow it well.

Some of the leaves are uniform in shape, about an inch in breadth, and eighteen in length. The plant produces others of a totally different character, consisting of an oblong leafy peltate base, from the back of which the costa is continued like an excurrent thread, at the end of which grows another elongated leafy portion, with a cupped peltate base.—*Bull's Catalogue*, 1876.

CATASETUM WARCZEWITZII. (*aliùs* Warczewitzia, *Skinner.*) A most fragrant terrestrial Orchid from Panama. Introduced by Mr. Skinner. Flowers pale green. Discovered by Warczewitz; blossomed at Penllergare in April with J. D. Llewelyn, Esq. (Fig. 34.)



C. *Warczewitzii*, (MONACHANTHUS) racemis brevibus densis pendulis, sepalis petalisque subrotundo-ovatis patulis incurvis, labelli galeâ anticâ basi compressâ apice ventricosâ lobis membranaceis planis lateralibus parvis serratis intermedio bilobo laciniis divaricatis fimbriatis, columnâ muticâ.

This has found its way into cultivation under the name of Warczewitzia, Mr. Skinner having supposed the genus to be new, and desiring to give it to the bold and indefatigable naturalist who discovered it. We quite agree with Mr. Skinner that if patience, and unwearied industry, courage that never quails before danger, and enthusiasm which despises difficulty, should give a naturalist a claim to a genus, Mr. Warczewitz most eminently has one. But he must wait for another opportunity, the plant that was given him being undoubtedly a Catasetum, and nearly related to *C. discolor.* As a species it is perfectly distinct from all others; the flowers which grow in a close pendulous raceme, consist of roundish ovate sepals and petals, and a helmetted lip which spreads into a thin 3-lobed limb, the middle lobe of which divides into two diverging fringed halves. They are pale green, with bright emerald green veins, and though not gaudy are extremely pretty. Their charm consists, however, in their delicious fragrance, which is quite equal to that of Aërides odoratum

CODIÆUM (CROTON) DISRAELI. One of the very best of the numerous new introductions of these plants that have taken place in recent years. The leaves are variable and singular in shape, beautiful in colour, and produced closely on the shoots, which gives the plant a close, dense appearance—a property somewhat wanting in many of the newer kinds. It was imported by Messrs. Veitch, from the South Sea Islands.

It forms an erect-growing bush. Leaves about a foot in length, marked on a green ground-colour with golden ribs and veins, broadish at the base, throwing out two side-lobes of moderate development; the middle lobe contracted in the lower portion, and broader upwards, is considerably longer than the others, so that the leaves, when fully developed, are more or less halberd-shaped. But the whole of the leaves are not thus regular in shape.—*Gardener's Chronicle*, N.S., vol. iv., p. 420.

ODONTOGLOSSUM LONDESBOROUGHIANUM. A very handsome Orchid from Mexico—we believe one of Messrs Backhouse's (of York) importations. It was flowered by Mr. Denning, in Lord Londesborough's famous collection, and exhibited at a meeting of the Royal Horticultural Society, where it received a first-class certificate. It is a very bright pleasing flower, something in the way of O. Bictonense.

Pseudo-bulbs, much rounded. Flowers racemose, individually large, frequently one and a half inches in diameter. Sepals and petals broad, clear yellow, spotted and barred with brown. Lip shaped like O. citrosmum, but on each side of the base is a small, blunt, narrow, retrorse auricle. A nearly triangular concave callus on the claw, and a tubercle on each side before it. Claw yellow, blotched with brown. Column wingless, and curved.—*Gardener's Chronicle*, N.S., vol. vi., p. 772.

VRIESIA REGINA. This is no doubt not only one of the very finest species of Vriesia ever introduced to Europe, but also ranks amongst the grandest of the Bromeliaceous order. When it first flowered, in the garden of the Emperor of Austria, at Vienna, it made quite a sensation. The plant is of much larger proportions than most of the species with which we are acquainted. The temperature of a warm orchid-house, with soil such as is used for Epiphytal Orchids, will suit it.

The leaves attain a length of four feet by seven inches in breadth. The flower-stalks reach a height of seven feet. The flowers are arranged in two-ranked curved spikes, forming a branched panicle, as in several other species; white issuing from rose-coloured bracts, giving a pleasing contrast: they are agreeably fragrant. It is a native of Rio Janeiro, where it is said to grow in clefts of the rocks.—*Gardener's Chronicle*, N.S., vol. iii., p. 234 (*with Fig.*).

RHODOLEIA CHAMPIONI. *Hooker*. A greenhouse shrub from Hong Kong of exquisite beauty, with heads of flowers surrounded by numerous large closely-packed floral leaves, of a brilliant deep rose colour.

Captain Champion, writing from Hong Kong, December, 1849, says: "This is admitted by all here to be the handsomest of Hong Kong flowering trees, and new to Europeans till I discovered it in February last. It is a small tree, but would probably, like the *Camellia*, blossom as a shrub profusely, each branch bearing six to eight flowers. Flower-heads at its extremity, and these two and a half inches in diameter. Outer leaflets of involucre about twelve. Inner leaflets of involucre, rose-coloured, about eighteen. Fruit of five radiating capsules, each about the size of a small hazel-nut, birostrate, two-celled, many-seeded; in the young state crowned by two long filiform styles. Leaves long, petiolated, bright green, glaucous beneath. Flowers in February, and the fruit only attains its full size and ripens in September, splitting, when ripe, from the apex downwards. Conditions of growth exactly those of *Camellia Japonica*, I should say, and the tree of about the same degree of hardihood. There was a tree of *Camellia Japonica* in flower in the same wood, also *C. oleifera*, and another probably new species, together with Dr. Siebold's *Benthamia*, a new and very fine *Pergularia*, an *Ornus*, six or seven Oaks, a Chestnut, a *Liquidambar*, and other rare trees."—*Botanical Magazine*, t. 4509.

The account given in the *Botanical Magazine* of this extraordinary genus is not sufficient to enable us to offer any opinion upon its affinity; but it appears to be the finest flowering shrub that has reached England since the arrival of the *Camellia* itself. Mr. Bentham compares it to *Sedgwickia*, an Asiatic genus unknown in gardens; and it must be confessed that in the scaly buds of the two there is a very striking resemblance. We should, however, observe that the leaves on the live plants received at the nursery of Messrs. Standish, of Bagshot, have not at all the texture or appearance of those of *Sedgwickia*, but in those respects are similar to *Viburnum Tinus*.



CUPRESSUS FUNEBRIS. *Endlicher.* (*aliàs* Cupressus pendula, *Staunton, Loudon,* &c.) A large weeping evergreen coniferous tree, from Chinese Tartary. Obtained by Mr. Fortune, and introduced by Messrs. Standish and Co., of Bagshot. (Fig. 35.)

This is probably the most interesting Coniferous plant yet in cultivation, and must in time displace the Weeping Willow. It is perfectly hardy, as was indicated by its native country. A figure of it is given in Lord Macartney's Embassy to China, where it forms a weeping tree in the foreground of the view of the "Vale of Tombs," a place situated in the inclement climate of Zhe-hol. The rude representations of it on Chinese porcelain, having been copied by our manufacturers, have given rise to the "willow-pattern" found in one of the commonest kinds of English table-ware. Mr. Fortune's account of his discovery of the tree was given in the *Gardeners' Chronicle* of April 13, 1850, to which the reader is referred for more detailed information concerning its habits.

LIBOCEDRUS TETRAGONA. *Endlicher.* (*aliàs* Juniperus uvifera, *Don; aliàs* Thuja tetragona, *Hooker.*) A magnificent evergreen Coniferous tree, from the cold southern regions of South America. Introduced by Messrs. Veitch and Co. (Fig. 36.)

This promises to be a rival of Araucaria imbricata, and to be as hardy; for it comes from just below the snow line of the Andes of Patagonia, where Mr. Lobb found it in the state of a tree from 50 to 80 feet high. According to the officers of the Beagle, it is one of the trees called

by the Spaniards, Alerce ; but this is doubted by Dr. Hooker. The young branches are covered with small thick dark green scales or leaves, so placed as to constitute a four-sided arrangement, and being much larger than is usual among the scale-leaved Conifers, produce a massive appearance, which is quite peculiar to the species. The cones are small bodies, consisting of two opposite pairs of scales, each having a long horn at its back, and the exterior pair not being half the length of the inner. These scales appear to be whitish inside, and inclose four winged seeds, which stand in pairs at the base of the larger scales; the smaller scales are seedless. These scales, of two different sizes, are placed in what botanists call a valvate position; that is to say, they all touch at the edge without overlapping any interior scale; and in this resides the distinctive character of the Libocedars. In the Arbor-vitæs (Thuja), on the contrary, the outer scales of the cones are all alike in size, and always inclose two or more smaller scales. In other words, the cones of a Libocedar are much more simple in their structure than those of an Arbor-vitæ, in which we have the first distinct commencement of the spiral arrangement found in the higher branches of the Coniferous order.

LIBOCEDRUS CHILENSIS. *Endlicher.* (*aliàs* Thuja chilensis, *Don; aliàs* Thuja andina, *Pöppig.*) From Chili. A noble evergreen, with the habit of an Arbor Vitæ. Imported by Messrs. Low and Co. Natural order Conifers. (Fig. 37.)

A fine evergreen tree. Mr. Bridges says that it is from 65 to 80 feet high ; Sir W. Hooker, that it is a tree from 30 to 40 feet high, of great beauty, and well worthy of being introduced into our gardens. Pöppig relates that it resembles the American Arbor Vitæ, but is less robust, sometimes branching from the base, and gaining the habit of a Cypress, but in other cases forming a conical head. "The trunk," he adds, "of this last variety is simple as high as the middle, straight, taper, clothed with a rough cracked bark of a brownish ash-colour, knotty, scarcely more than a foot thick, with a yellowish, resinous, hard, strong-scented (*olente*) wood." The young branches of this tree, when they are visible, are compressed, obovate between the nodes, and bright green, with glaucous furrows ; they are, however, for the most part, hidden by the leaves. The latter, which are compressed, blunt, and keeled, are glaucous at the sides, but bright green at the back and edges ; they stand in two pairs crosswise, the lower pair being much larger than the upper pair, which resembles two tubercles. These leaves evidently represent the type of the cones, which are drooping, short-stalked, about half an inch long, and consist of four woody scales, also standing crosswise, in two very unequal pairs. These scales are applied face to face, and have a sharp tubercle on the outside below the point. The two larger scales have each two seeds at their base ; the two smaller are seedless. The four seeds stand erect in the cones, with unequal-sided wings.—*Journ. Hort. Soc.*, vol. v., p. 35. It is stated in that work that the plant had been also introduced by Messrs. Standish & Co. This, however, proves to have been an accidental error, Mr. Low having been the sole importer.

DENDROBIUM PALPEBRÆ. *Lindley.* From the East Indies. A handsome stove epiphyte belonging to the natural order of Orchids, flowering in November. Flowers white, with a lip stained with yellow. Introduced by Messrs. Veitch and Co.

A charming species, in the way of *D. densiflorum*, with the perfume of distant hawthorn. Its stems are more slender than those of the species just named ; the flowers in loose racemes and white, with a deep yellow stain at the base of the lip, which is not only covered with soft down, but is fringed near the base with long hairs, like eyelashes. These elevated lines pass along the middle, and terminate near the base in a 3-lobed tubercle, for the purpose of receiving which the base of the column is hollowed out into an oblong cavity. It was received from Messrs. Veitch, in November, 1849.—*Journ. Hort. Soc.*, Vol. v. p. 33.

ACHIMENES ESCHERIANA. *Lemaire.* A hybrid between A. rosea ♀ and longiflora ♂. Said to be handsome.

Raised by M. Regel, of Zurich. It has the habit of *A. rosea*, but is rather stronger. The flowers are intermediate in size between the two parents ; the limb is a rich crimson, spotted with bluish violet when going off ; the orifice is golden yellow, dotted with purple, as in the mother.—*Van Houtte's Flore*, 1848, p. 405 *d.*

DRACÆNA BAUSEI. A garden hybrid between D. Chelsoni and D. Regina. Among the many fine showy varieties of these plants that have resulted from the manipulations of hybridists within the last few years, there are few that surpass this. The plant has a moderately compact habit. The leaves, about four inches in width, are oblong elliptical, recurving in a manner that gives it a more graceful appearance than is existent in the kinds of erect habit. Surface dark bronze, crimson on the edge, narrow in the case of the lower leaves, and broader in those formed as the plant gets older.



THE RED NEPENTHES ⅔ NAT. SIZE.
(NEPENTHES SANGUINEA.)



[PLATE 9.

THE RED NEPENTHES.

(NEPENTHES SANGUINEA.)

An Evergreen Plant, from MALACCA, *belonging to the Natural Order of* NEPENTHACEÆ.

Specific Character.

NEPENTHES SANGUINEA.—Stem triangular, glabrous. Leaves sub-sessile, cordate, stem-clasping, obovate-oblong. Pitchers twelve inches long, two to two and a half inches wide, downy, dark crimson, cylindrical (younger ones winged, dilated at the base), margin broad, prolonged at the back into a broad lamina. Lid oblong or orbicular, densely sprinkled with glands on the inner surface, provided with a spur-like process at the base on the outer surface.

Gardener's Chronicle, 1872, p. 542.

THIS magnificent species is undoubtedly one of the finest of the whole family of cultivated Pitcher-plants, not alone on account of the large size of its individual pitchers, but equally as much so for the splendid colour these attain when well managed. Moreover, the general habit of the plant is such as cannot fail to commend it to the many who now grow these most singular of Nature's vegetable forms. It belongs to one of the most prominent sections in the group of Insectivorous plants, to which of late years more than ordinary interest has been drawn through the discussions that have taken place as to the part these vegetable insect-traps play; some contending that the fact of the insects being allured to their destruction within the jug-like leaf appendages of these and the nearly allied Sarracenias was merely owing to an accident of the existence within these receptacles of a sweet liquid, which attracted the insects by its offering to them dainty food; others maintaining that the presence of the insects in course of decomposition was an element of food essential to the sustenance and well-being of the plants; others, again, looking upon these and all other plants which have anything about them calculated to allure insects to destruction as simply one of Nature's means of keeping this portion of the animal creation within bounds. From a lengthened acquaintance by cultivating most of the plants, native as well as exotic, of this character, and a close observation of a good many experiments carried out with a view to give evidence bearing upon the subject, we think there is not much room for doubt that plants so constructed as to entice, destroy, and retain the dead bodies of insects are in reality animal feeders. The subject is highly interesting, but space will not admit of our entering

into it here further than by pointing to the fact that, so far as our own experience goes, the more insects the plants were in a position to entrap, the better and stronger they grew to a marked extent, and that the presence of putrid animal matter in absolute contact with vegetable life, so soft in texture as are most of the plants in question, unless of some natural assistance to them, would in a very short time cause its destruction; in place of which the reverse is the case, as the longer the dead insects remain, the longer the traps retain their vitality.

Found indigenous, as most of the species are, in the continually moist regions of India or the adjacent islands, they need to be grown in a warm house where the atmosphere is never allowed to become so dry as will answer for most plants inhabiting hot countries. At one time it was supposed they were benefited by plunging in bottom heat, but the contrary is now proved, for the best examples ever produced were suspended as near as possible to the roof of the house in which they were grown. The best fibrous matter, selected from good orchid peat, to about a third or a fourth of sphagnum, with broken pot-shreds and some sand added, will grow them well. Whatever potting is required must be done with very great care, so as not to injure their fragile roots. Plenty of drainage is a necessity, with water to the roots every day during the growing season, and the soil, even when at rest, always kept moist, as well as being syringed over-head once daily, with a humid, rather close atmosphere, and shade in sunny weather. A temperature during the night in winter of about 65°, and 5° more by day, with 70° at night in summer, up to 80° or 85° in the daytime, will answer.

The subject of our illustration was taken from the splendid collection of O. O. Wrigley, Esq., Bridge Hall, Bury, Lancashire, where these, in common with equally well-managed Sarracenias and magnificent Orchids, present an appearance such as is very rarely met with, and which to the lover of exceptionally fine plants offer a treat worth going far to see.

The following additional kinds are all handsome and distinct.

N. Rafflesiana. A grand, large, free-growing species, with very large flask-shaped pitchers, beautifully mottled with reddish-brown.

N. lanata (*Syn. villosa*). A robust-growing, thick-leaved species, with very distinct, large, long pitchers, broad towards the lower part. Wings ciliolata.

N. Hookerii. A stout-growing sort, with short, broad, medium-sized pitchers, beautifully spotted with reddish-brown. A good grower.

N. Sedenii. A small-growing hybrid, bearing long pitchers, profusely covered with dark-red streaks and spots.

N. chelsonii. Another hybrid, raised at Messrs. Veitch's establishment at Chelsea, from whence so many fine seedlings have made their appearance. It bears broad, flask-shaped, highly-coloured pitchers, with prominent wing appendages.



DAMPIER'S CLIANTHE.
(CLIANTHUS DAMPIERI.)

[PLATE 10.]

DAMPIER'S CLIANTH.

(CLIANTHUS DAMPIERI.)

A Greenhouse Perennial Trailer, from NEW HOLLAND, *belonging to the Order of* LEGUMINOUS PLANTS.

Specific Character.

DAMPIER'S CLIANTH.—Herbaceous, shaggy, decumbent. Leaflets opposite, very seldom alternate, obovate-oblong. Stipules cut or toothed. Peduncles bearing a kind of umbel at the point, shorter than the leaves. Calyx 5-cleft, with acuminate segments, and acute re-entering angles. Ovary shaggy.

Clianthus Dampieri, *Cunningham in Hort. Soc. Trans.* II. *series* i. 522. *R. Brown in Sturt's Narrative* (1849), II. 71; *aliàs* Clianthus Oxleyi, *Cunningham; aliàs* Donia speciosa, *Don* (according to Brown); *aliàs* Kennedya speciosa, *of Cunningham.*

THIS beautiful plant, raised from New Holland seeds, by Messrs. Veitch of Exeter, under the name of Kennedya speciosa, received the large silver medal of the Horticultural Society when exhibited in Regent Street, an honour never conferred upon any new plants, except such as are of surpassing value as objects of cultivation.

It forms a stout decumbent herbaceous perennial, of a pallid aspect, covered with long hairs. The pinnated leaves are in about five pairs, with an odd one; the leaflets being oblong, or slightly obovate, opposite in most cases, and furnished with a pair of coarsely-toothed or slashed stipules. From the axils of these leaves, and shorter than they, arise angular peduncles, having on the end four or five quasi-umbellate flowers of the most brilliant colour. Their calyx is tubular, shaggy, with five acuminate lobes, and acute re-entering angles. The standard is ovate, oblong, acuminate, bright scarlet, with a deep purple stain at the base, which is convex and shining; the keel is acuminate, scarlet, and very like that of the Crimson Clianth (Clianthus puniceus), as are the wings, which are also scarlet. The ovary and stamens appear not to be different from the organs belonging to the last-mentioned species.

Dr. Brown, who seems to have studied this plant, speaks of it thus in the Appendix to *Captain Sturt's Narrative of an Expedition into Central Australia*:—

"In July, 1817, Mr. Allan Cunningham, who accompanied Mr. Oxley in his first expedition into the western interior of New South Wales, found his Clianthus Oxleyi on the western shore of Regent's Lake, on the River Lachlan. The same plant was observed on the Gawler Range, not far from the head of Spencer's Gulf, by Mr. Eyre, in 1839, and

more recently by Capt. Sturt, on his Barrier Range, near the Darling. I have examined specimens from all these localities, and am satisfied that they belong to one and the same species.

"In March (not May), 1818, Mr. Cunningham, who accompanied Capt. King in his voyages of survey of the coasts of New Holland, found on one of the islands of Dampier's Archipelago, a plant which he then regarded as identical with that of Regent's Lake. This appears from the following passages of his MS. Journal:—

"'I was not a little surprised to find Kennedya speciosa (his original name for Clianthus Oxleyi) a plant discovered in July, 1817, on sterile bleak open flats, near Regent's Lake, on the River Lachlan, in lat. 33° 13′ S., and long. 146° 40′ E. It is not common; I could see only three plants, of which one was in flower. This island is the Isle Malus of the French.' Mr. Cunningham was not then aware of the figure and description in Dampier above referred to, which, however, in his communication to the Horticultural Society in 1834, he quotes for the plant of the Isle Malus, then regarded by him as a distinct species from Clianthus Oxleyi of the River Lachlan. To this opinion he was probably in part led by the article 'Donia, or Clianthus,' in *Don's System of Gardening and Botany*, vol. II. p. 468, in which a third species of the genus is introduced, founded on a specimen in Mr. Lambert's Herbarium, said to have been discovered at Curlew River, by Capt. King. This species named Clianthus Dampieri, by Cunningham, he characterises as having leaves of a slightly different form, but its principal distinction is in its having racemes instead of umbels; at the same time he confidently refers to Dampier's figure and description, both of which prove the flowers to be umbellate, as he describes those of his Clianthus Oxleyi to be. But as the flowers in this last plant are never strictly umbellate, and as I have met with specimens in which they are rather corymbose, I have no hesitation in referring Dampier's specimen, which many years ago I examined at Oxford, as well as Cunningham's, to Clianthus Dampieri. This specimen, however, cannot now be found in his Herbarium, as Mr. Heward, to whom he bequeathed his collections, informs me; nor can I trace Mr. Lambert's plant, his Herbarium having been dispersed.

"Since the preceding observations were written, I have seen, in Sir William Hooker's Herbarium, two specimens of a Clianthus, found by Mr. Bynoe, on the north-west coast of Australia, in the voyage of the Beagle. These specimens, I have no doubt, are identical with Dampier's plant, and they agree both in the form of leaves and in their subumbellate inflorescence, with the plant of the Lachlan, Darling, and the Gawler Range. From the form of the half-ripe pods of one of these specimens, I am inclined to believe that this plant, at present referred to Clianthus, will, when its ripe pods are known, prove to be sufficiently different from the original New Zealand species, to form a distinct genus; to which, if such should be the case, the generic name *Eremocharis* may be given, as it is one of the greatest ornaments of the desert regions of the interior of Australia, as well as of the sterile islands of the north-west coast."

It is possible that this may be intended to cover some further meaning than can be assigned to the words as they would be interpreted by ordinary readers. We can only remark that we find in this plant no indication of a genus different from Clianthus; in fact, we see less to separate it from the Clianths than is to be found in Endlicher's Streblorhize (Clianthus carneus). At all events, it is much to be regretted that naturalists should thoughtlessly encumber books with names of which there is no present or probable want. It is early enough to add to the chaos of Botanical nomenclature when a clear case of scientific necessity can be made out.

GLEANINGS AND ORIGINAL MEMORANDA.

MARANTA (?) ORNATA. *Linden.* Var. 1, ALBO-LINEATA; var. 2, ROSEO-LINEATA. Two charming stove plants from Columbia, introduced by M. Linden. Leaves rich deep green, striped in one variety with clear white, in another with clear pink.

METROSIDEROS FLORIDA. *Smith* (*aliàs* Melaleuca florida, *Forster*; *aliàs* Leptospermum scandens, *Forster*). A beautiful greenhouse shrub, with rich crimson flowers, belonging to the order of Myrtleblooms (*Myrtaceæ*). Introduced to the Boyal Botanic Gardens, Kew, from New Zealand. Flowers in May.

A shrub, about five feet high, everywhere glabrous, forming a compact mass, but every now and then sending out spreading branches, which indicate that under favourable circumstances it would be scandent. Leaves opposite, one inch or one and a half inches long, leathery, slightly glossy, distinctly and closely nerved on both sides; dark green above, pale beneath, where also the dotting is more distinct than on the upper side, but not visible to the naked eye. Corymbs terminal, almost sessile. Petals orbicular, concave, red, deciduous, longer than the calycine lobes. Stamens numerous, at first involute, then spreading, four times as long as the petals, red. A fine glossy-leaved evergreen shrub, forming a handsome bush, having much resemblance to the Myrtle.

CHOROZEMA CORDATUM. *Lindley* (*aliàs* C. flava, *Henfrey*). A yellow variety of this well-known little greenhouse shrub has been imported by Messrs. Henderson, of the Wellington Nursery, and published in the *Gardeners' Magazine of Botany* as a new species. Except colour, which is variable in its wild state, there is nothing essential by which it can be distinguished.

ERICA ELEGANTISSIMA. *Gardeners' Magazine of Botany.* A pretty hybrid, said to have been raised between E. hiemalis and E. Hartnelli. Flowers tubular, deep rose, with a white flat border.

ÆSCHYNANTHUS JAVANICUS. *Hort.* A most beautiful stove epiphyte, introduced by Messrs. Rollisson, from Java, with close racemes of bright red ascending flowers, each more than two inches long, with a starry yellow throat. Belongs to the order of Gesnerads.

At first sight this bears much resemblance to the Æ. pulcher. The plant is more compact, the leaves smaller, the flowers all over down as well as the pedicels, the calyx truly cylindrical (not swollen below), the limb spreading, the corolla more slender and graceful, the stamens exserted. Leaves opposite, oval or ovate, sometimes approaching to oblong, between coriaceous and fleshy, obscurely angular and toothed, the veins sunk in the substance of the leaf. Corymbs terminal, of many large, handsome, richly-coloured flowers. Calyx large, greatly wider than the tube of the corolla it includes, downy, dark green, red-brown above; the tube cylindrical, faintly striated, the five lobes of the limb spreading horizontally. Corolla bright red, about thrice the length of the limb; the tube slender, funnel-shaped, downy, laterally compressed, with a prominence under the throat; mouth oblique; limb of four nearly equal, spreading, large ovate lobes, the upper one notched, the rest entire and streaked and blotched with yellow. Stamens all exserted, especially the upper ones.—*Botanical Magazine*, t. 4503.

ACINETA CHRYSANTHA. *Lindley* (*aliàs* Neippergia chrysantha, *Morren*). A stove epiphyte, supposed to be from Mexico, exhibited at Ghent, by M. Auguste Mechelynck, in September, 1849. Flowers the size of A. Barkeri, in erect racemes, of a bright golden-yellow colour. Very handsome. Natural order of Orchids.

This noble-looking plant has exactly the habit of the other Acinetes, except that the raceme grows erect, to the height of a foot or so, instead of being pendulous. It is loaded closely with golden-yellow blossoms, each more than 17½ inches wide, very like those of A. Barkeri, except in colour. The lip appears to be white and the column crimson. At night the flowers have a sweet aromatic odour; by day they are scentless. From the other Acinetes it is distinguished especially by the presence of a long, blunt, papillose horn arising from the hypochil. (*Annales de Gand*, t. 282.) We do not perceive any ground for separating this plant from Acinete, the horn upon which Professor Morren relies being equally present upon both Barker's and Humboldt's Acinete, although of a different form. Nor do we feel certain that the erect position of the flowering raceme is habitual with this plant, for, according to the drawing, while one raceme rises upright, another is bent downwards in the same manner as in the Acinetes. Annexed to the article which describes this plant, M. Morren makes the following startling announcement: "I shall prove in another place that *Anguloa*, *Lycaste*, or *Maxillaria* are simply *isophorous* forms of the same organisation; that is to say, that one may be transformed into another, so that the same plant will produce one year the flower of Anguloa, and another that of Lycaste. This strange fact I have witnessed, and, connecting it with other analogous facts, well ascertained to exist in the Vegetable Kingdom, I think of soon bringing forward a general theory of isophorism in plants, a doctrine exactly analogous to that of isomerism, now perfectly established in chemistry and mineralogy. I suspect that this Neippergia is also an isophorous form, that is to say, transformable into another genus."

CUPHEA PURPUREA. *Lemaire*. A very pretty hybrid perennial, obtained by M. Delache of St. Omer, between C. miniata ♀ and C. viscosissima ♂. Flowers large, bright rose-colour, handsome.

To the habit and foliage of C. miniata, and its two large upper petals, it adds the four small petals of C. viscosissima, but has little of its viscidity. The colour of the flowers is a fine bright rose, slightly shaded with violet, a charming tint, which cannot be given by art. It requires the same treatment as other Cupheas.—*Van Houtte's Flore*, t. 412. Seems to be a good bedding-out plant.

HELICONIA ANGUSTIFOLIA. *Hooker*. A noble hothouse herbaceous plant from Brazil, with large crimson spathes, and snow-white flowers. Blossomed at Kew in January, 1846. Belongs to the order of Musads.

A very handsome and rather dwarf species, introduced to Liverpool from Brazil. Its beautiful bright red spathes, deep orange-coloured ovaries, and white sepals tipped with green, have a very handsome effect. The flower-stem is sheathed by the bases of the long petioles, and the principal leaf is one foot and a half long, and about three inches wide, with a stout rib and parallel oblique veins, narrowed to a point at both ends, and glabrous, except that the rib beneath the very long taper petioles and cylindrical sheaths (at least in their upper part) is clothed with a scattered pulverulent or scurfy down. The rachis is a span and more long, deep red, bearing at distances of an inch or more six or seven bright red spathes, the lowest one six inches long, the rest gradually shorter and less acuminated. This belongs to a genus of tropical plants inhabiting moist places, conspicuous by their fine broad leaves and showy flowers; forming, with allied genera, dense thickets in their native localities. The present may be considered a dwarf species of the genus, as it does not attain more than between three and four feet in height. It requires to be grown in a large pot, in light loam, supplying it freely with water during summer.—*Botanical Magazine*, t. 4475.

GARRYA ELLIPTICA. *Douglas*. The Female. A hardy evergreen shrub, from North Western America. Introduced by the Horticultural Society. Belongs to the order of Garryads.

The male only of this fine evergreen bush had been known in our gardens, in which its good foliage and long massive tails of yellowish catkins, appearing in the earliest days of spring, have deservedly rendered it a universal favourite. The female, which in foliage is like the male, proves to be as destitute of beauty as the male is conspicuous for it. The catkins are short, green, and, at a little distance from the bush, are not to be observed. To botanical gardens the plant is an acquisition, as it is to horticulture, inasmuch as it will probably now ripen fruit, and thus afford a ready means of propagation.—*Journ. Hort. Soc.*, vol. v., p. 137.



SYMPLOCOS JAPONICA. *De Candolle* (*aliàs* S. lucida, *Zuccarini*). A hardy (?) evergreen shrub, from Japan, belonging to the natural order of Sapotads. Flowers in small, pale yellow clusters. Introduced by Messrs. Standish and Noble. (Fig. 38.)

This is said to grow in Japan to the size of the European ash-tree, with a close head; or to become a coppice-bush 20 feet high. The Japanese call it *Furoggi*. Thunberg took it for a myrtle! It is much used by the Japanese for decorating the shrines of their idols, for which its evergreen habit renders it suitable. According to Siebold, it grows naturally in the southern provinces of Japan along with true Laurels, Terebinths, Magnolias, and Buckthorns.

RHAPONTICUM ACAULE. *De Candolle* (*aliàs* Cynara acaulis, *Linnæus*; *aliàs* Cynara humilis, *Jussieu*; *aliàs* Serratula acaulis, *De Candolle*;

aliàs Cestrinus carthamoides, *Cassini*). A fragrant tap-rooted perennial; native of Barbary, belonging to the Cynaraceous division of Composites, and said to have been introduced in the year 1799. (Fig. 39.)

IRIS CRETENSIS. This is a hardy plant from the shores of the Mediterranean, where it was found growing on the hills, at an elevation of 5,000 feet above the sea-level. Mr. Elwes introduced it to cultivation, and bloomed it at Cirencester in November; its proper season of flowering is said to be in April or May.

Rhizome, short-creeping, a quarter or a third of an inch in diameter; tufts crowded, consisting of many leaves and a single central flower. Leaves linear erect, firm in texture, acute, finely striated, not more than a twelfth or an eighth of an inch in breadth, the most developed reaching a length of six or nine inches. Spathe of two lanceolate, acuminate, pale green valves, sometimes as long or longer than the tube. Ovary oblong, sub-sessile within the spathe; perianth tube green, cylindrical, three or four inches long; limb bright lilac-purple, two and a half to three inches long; the segments nearly equal in length, and all furnished with long claws; the blade of the three outer ones reflexing from its base, veined in the lower half with bright yellow, and furnished with many oblique lines of lilac-purple on a white ground, the blade of the three inner ones rather narrower and permanently erect; blade of the stigmas an inch and a half long; crests linear, serrulate on the outer borders. Anthers white, above half an inch long, shorter than the flattened filaments.—*Botanical Magazine*, 6343.

IXORA DUFFII. A fine and distinct species, discovered by and named after Mr. Duff, of the Sydney Botanic Garden. It has been introduced to this country by Messrs. Veitch. It differs in appearance from all others; the habit of the plant is stout and bold, particularly the leaves, which are not unlike those of I. Griffithii, a now seldom-met-with kind, which we have seen well grown and grandly bloomed. The flowers are produced in large heads; one we measured on quite a small plant was 8½ inches through. Like the other sorts, both species and garden hybrids, of which there are a good many strikingly handsome varieties, I. Duffii will no doubt need to be grown in a high temperature to do justice to it, without which it is not much use attempting their cultivation. Good fibrous peat, to which has been added a fair quantity of sand, suits them, with a moderately humid atmosphere, as well as plenty of moisture to the roots; a full volume of light, but a thin shade when the sun is powerful.

Leaves large, upwards of a foot in length. The flowers more nearly resemble those of I. salicifolia than those of any other known species. They grow in large globular cymose heads, six inches or more in diameter, and are of the richest vermilion-red, shaded with crimson. The tube of the corolla is slender, and as finely coloured as the limb, the lobes of which are ellipsoid and slightly reflexed. It is reported to be a native of Ualan, or Strong Island, one of the Caroline group, in the Pacific.—*Florist and Pomologist*, 1878, p. 76.

GALPHIMIA GLAUCA. *Cavanilles.* A Mexican hothouse Malpighiad, with handsome glaucous foliage, and an abundance of gay yellow blossoms. Introduced by the Horticultural Society. Flowers in the autumn and early winter.

A beautiful shrub, easily kept in the form of a bush. The leaves are a deep bluish-green, ovate, obtuse, glaucous on the under side, and furnished with a pair of glands on the edge near the base. The flowers, which are golden-yellow, appear in close terminal racemes, between three and four inches long in strong plants. Each has five distinct petals, with almost exactly the form of a trowel. Grows freely in a mixture of loam and sandy peat, and is easily increased by cuttings of the half-ripened young shoots. It requires to be kept rather dry for a few months, and afterwards, during the growing season, to be freely supplied with moisture both to the roots and in the atmosphere.—*Journ. Hort. Soc.*, vol. v., p. 139. *With a figure.*

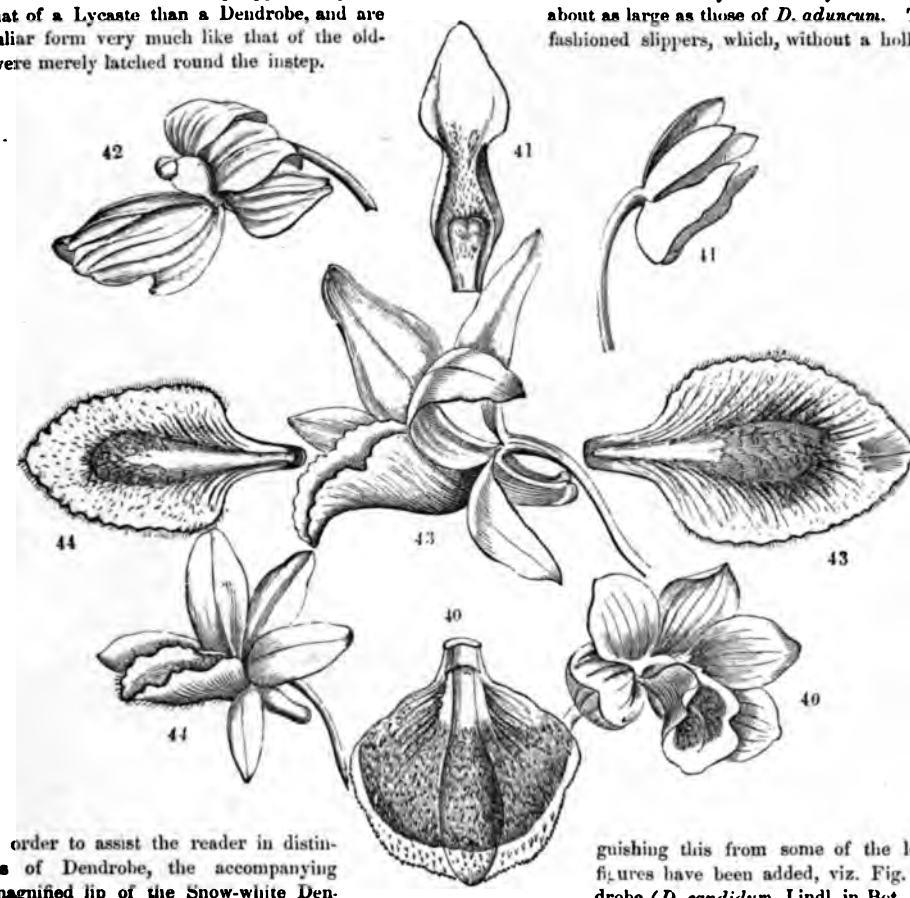
TODEA INTERMEDIA.

A New Zealand fern of great beauty. Intermediate in character between T. superba and T. hymenophylloides (pellucida). It differs from the latter in the fronds being less abrupt below; and the feathering down to the base with the gradual shortening pinnæ, present in T. superba, is absent in this plant. It is very handsome, requiring the same conditions of shade and moisture, both at the roots and in the atmosphere, that the other species thrive under.—*Bull's Catalogue*, 1875.

DENDROBIUM CREPIDATUM. A beautiful species from the Indian Archipelago, with slender erect stems, and pink white and yellow flowers. Blossomed with R. S. Holford, Esq., March, 1850. (Fig. 40.)

D. crepidatum ; caulibus teretibus erectis, foliis . . . , floribus geminis, sepalis petalisque oblongis obtusis firmis, labello oblongo integro subsinuato obtuso lateribus erectis intus levissimè pubescente basi utrinque plicato-venoso, cornu brevi obtuso.

Although we have an imperfect knowledge of this extremely pretty plant, we are able to state that it is perfectly distinct from all others. It first came to us in a letter from Mr. Bassett, Gardener to R. S. Holford, Esq., and afterwards the whole plant was transmitted by that gentleman's orders. The leaves however were absent, and the flowers much faded. It has slender erect stems ; and the flowers, which are white, tipped with delicate pink, but deep yellow in the middle of the lip, appear in pairs as in *D. Pierardi* and its allies. They have a very firm texture, more like that of a Lycaste than a Dendrobe, and are about as large as those of *D. aduncum*. The lip has a peculiar form very much like that of the old-fashioned slippers, which, without a hollow for the foot, were merely latched round the instep.



In order to assist the reader in distinguishing this from some of the less known species of Dendrobe, the accompanying figures have been added, viz. Fig. 41, flower and magnified lip of the Snow-white Dendrobe (*D. candidum*, Lindl. in Bot. Reg. 1838, misc. no. 54) ; Fig. 42, a flower of the Revolute Dendrobe (*D. revolutum*, Lindl. in Bot. Reg. 1840, misc. 110) ; Fig. 43, Flower and magnified lip of the Green-centred Dendrobe (*D. mesochlorum*, Lindl. in Bot. Reg. 1847, t. 36) ; Fig. 44, Flower and magnified lip of the Egerton Dendrobe (*D. Egertoniæ*, Lindl. in Bot. Reg. 1847, t. 36)

CALANTHE SEDENII. An Orchid of hybrid origin, raised, like many other fine varieties, by Messrs. Veitch of Chelsea, and is the result of a cross between C. vestita rubro-oculata and C. Veitchii, the latter parent also a hybrid.

It is a beautiful kind, with large flowers, purple, and white at the base of the lip; it forms large drooping racemes, and is a charming addition to these most lovely of autumn flowers, which for the beauty and

endurance of their blossoms have few equals, and deserve a place wherever there is the means of keeping them warm enough. Coming as they do from the hot regions of India, they need to be always comparatively hot.

ISOLOMA BREVIFLORA (*aliàs* Gesnera breviflora, *Lindley; aliàs* Gesneria Seemanni, *Hooker*). A fine hot-house Gesneraceous plant, with long whorled shaggy racemes of scarlet spotted flowers. Native of Panama. Blossoms in October at Kew.

A very handsome, copious-flowering, and bright coloured species, approaching nearest to *G. longifolia*, but differing much in the form of the leaves and in the limb of the corolla. It was discovered by Mr. Seeman, at Panama. Stem two feet or more high, simple, rather stout below, nearly terete, villous with spreading hairs, as is almost every part of the plant. Leaves opposite and ternate, the lower ones large, broadly ovate, or sub-obovate, on rather long petioles, coarsely serrate, acute, rather than acuminate; upper ones gradually smaller and more tapering to a point, all obtuse at the base. From the whorls of the upper floral leaves, the hairy peduncles appear fasciculato-verticillate, longer than the petioles, and the uppermost ones longer even than the leaves, single-flowered. Calyx shallow, cup-shaped, with five nearly regular, acute, spreading lobes. Corolla very villous, bright brick red, a little inclined to orange. Tube nearly cylindrical, short, tapering, orange at the base; the limb of five, nearly equal, rounded segments, spotted with deeper red, and clothed with glandular hairs. Ovary roundish ovate, very villous, having at the base four conspicuous, hypogynous, broad glands, of which one is bifid. The rhizome of Gesneraceous plants is either in the form of a thick, fleshy round tuber, or consists of a number of fleshy scales, compactly seated on an elongated axis, and, therefore, analogous to an underground surculose stem. The rhizome of this species belongs to the latter form, resembling that of *Gloxinia* and *Achimenes*, and requiring the same kind of treatment. It will thrive in a mixture of light loam and leaf mould; and, in order to start the roots, they should be placed in bottom-heat in a warm stove, taking care not to give much water till they have made some progress in growth. If, during the summer, they happen to be placed in a position fully exposed to the south, they will require to be shaded during the middle of the day.—*Botanical Magazine*, t. 4504. The plant here spoken of under the name of *Gesneria Seemanni* is only a well-grown specimen of the *Gesnera breviflora*, described in the *Journal of the Horticultural Society*, vol. iii., p. 165 (April, 1848.) It is one of the Isolomes which M. Decaisne has, with much reason, elevated to the rank of a genus, as had Regel, before him, under the name of *Kohleria*. Other Isolomes are *G. longifolia*, *Bot. Reg.*, t. 40, 1842; *G. Hondensis*, *Bot. Mag.*, t. 4217; *G. trifolia*, *ib.*, t. 4342; *G. mollis*; *G. lasiantha*, Zuccarini; *G. tubiflora*, Cav.; and, perhaps, *G. verticillata*, Cav.; as M. Decaisne has pointed out in the *Revue Horticole*, 3rd Ser., vol. ii., p. 465.

CLERODENDRON BETHUNEANUM. *Lowe.* A fine stove Verbenaceous shrub, with the appearance of *C. Kæmpferi*. Flowers crimson, in large panicles, produced in September, 1849, with Lucombe and Co. A native of Borneo.

Each flower of this plant is exceedingly beautiful in itself; peduncles, pedicels, bracts, calyx, corolla, the very long and graceful stamens, all are of the deepest crimson, while the two side lobes of the corolla have a purple spot near the base, and the upper lobe has a much larger white spot. The species has been named after Capt. Bethune, R.N., who brought it and several other fine plants from Borneo. When its flowering season is past, it does not lose all its charms, for the crimson bracts and calyces remain, and the latter contain each a four-seeded berry of the richest blue colour. Although in its native country attaining a height of ten feet, it is one of those plants that flower readily when but of small size, and confined in a pot.—*Botanical Magazine*, t. 4485.

TABERNÆMONTANA LONGIFLORA. *Bentham.* A stove shrub of the order of Dogbanes (Apocynaceæ) with long white fragrant flowers and a green tube. Blossomed with Lucombe and Co. A native of Sierra Leone.

The shrub has close-placed, ample dark green foliage, and remarkably large white or pale cream-coloured flowers, diffusing a delicious aromatic fragrance, resembling that of cloves. Dr. Vogel, who found the plant at Sierra Leone, speaks of the shrub as very handsome, with the aspect of a Citrus, and yielding a milky juice. Leaves elliptical, large, with a short point, and a short but dilated petiole, the veins diverging almost horizontally from the mid-rib. Peduncles erect, stout, each bearing about three large white flowers. Calyx lobes broadly oval, obtuse: at their base is a circle of minute glandular scales. Corolla with the tube twisted, 4 inches in length, swollen below the middle; limb of five waved or reflexed ligulate lobes. This shrub requires a warm stove. It will thrive in a mixture of loam and peat soil, if placed so as to have the benefit of bottom-heat, and watered and syringed freely during the summer; but care should be taken that at no time (especially during its season of rest) the mould becomes saturated, for the soft and slightly succulent roots are apt to suffer if kept in too wet a state, while the plant indicates a cessation of growth.—*Botanical Magazine*, t. 4484.

ASPARAGUS PLUMOSUS. Combined with its excellence as a culinary vegetable, we have few more elegant things than Asparagus officinalis, the ordinary cultivated plant of our gardens, to which the present subject is allied, and is undoubtedly one of the most graceful and beautiful fine-leaved plants that have made their appearance in this country. It was introduced to the Chelsea Nurseries (Messrs. Veitch) from Natal by Mr. Mudd. The country from whence it comes points to its requirements in cultivation being those of an ordinary greenhouse as to temperature, air, &c. Peat or loam will doubtless answer for it, mixed with enough sand to keep it open.

A climbing under-shrub, with very numerous, slender, glabrous, green spreading branches. The true leaves are in the form of minute deltoid scales, with an acute ultimately reflexed point. The cladodes, or false leaves, are grouped in tufts; each one is from one-eighth to one-fourth of an inch long, bristle-shaped and finely pointed.—*Gardeners' Chronicle*, N.S., vol. ix., p. 527.

ARDISIA OLIVERI. A very handsome cool stove or intermediate temperature shrub, from Costa Rica, introduced by Messrs. Veitch, with whom it has flowered, and turns out to be the handsomest of the species. It is of robust habit, the branches and leaves bright green, and altogether a very desirable plant, particularly adapted for cultivation by those who do not care to grow such things as are only to be had in good condition under a high temperature.

A robust, green shrub, everywhere quite glabrous, with bright green branches and foliage. Leaves shortly, stoutly petioled, reflexed, five to seven inches long, oblanceolate, acuminate, narrowed into the petiole, obscurely toothed, many-nerved, rather membranous; mid-rib thick; glands numerous, linear-oblong, brown, disposed transversely. Inflorescence of numerous peduncled corymbs, disposed in a large terminal dense head, four to five inches in diameter; peduncles and pedicles of a fine red-purple colour; bracts oblong, caducus. Flowers over half an inch in diameter, of a fine rose-purple colour, with white and golden-yellow anthers; calyx campanulate; lobes ovate, obtuse, or erose at the apex, marked with linear glands; corolla-lobes orbicular ovate, subacute, also marked with linear glands. Stamens declinate. Filament very short, pubescent at the base. Anthers curved, ovate-lanceolate, opening by two pores at the summit. Ovary glabrous. Style rather short, subulate —*Botanical Magazine*, 6357.

ANTHURIUM SCHERZERIANUM WARDII. A magnificent variety of the well-known A. Scherzerianum, with immense spathes, in length about that of ordinary good forms of this plant, but very much broader. There is no difference in the size or shape of the spadix or in the general colour of the flower; but amongst the various forms of this Anthurium that have appeared this is probably the finest. Another desirable property existent in it is that the spathes lay flat when fully expanded, and not curled, as many are, and which detracts much from their appearance. Like others of the same species, it grows well in an intermediate temperature, with plenty of light, and moisture to the roots, and a little shade when the sun is powerful. The best material in which to grow these plants is good orchid peat and chopped sphagnum, in about equal parts, with broken pot-shreds and a little sand.

TUPA CRASSICAULIS. *Hooker* (*aliàs* Siphocampylus canus, of the *Belgian Gardens*). A Brazilian greenhouse Lobeliad, of little interest, with long serrated leaves, hoary underneath, and dull yellowish-red flowers. Blooms in summer and autumn. Introduced by M. Makoy of Liége.

Our plants are nearly three feet high, and exhibit a stout but woolly or cobwebby stem, leafy at the top, something after the manner of the Daphne Laureola. Leaves soft, four to six inches long, patent or deflexed, lanceolate or broad-lanceolate, acute, serrated, tapering at the base into a short foot-stalk, dark green and slightly downy above, tomentose and hoary beneath. Peduncles solitary, one to two inches long, woolly. Calyx woolly, the limb of five

acuminated spreading segments. Corolla yellowish, or greenish red, at length quite red; tube two inches long, nearly straight, laterally compressed; limb two-lipped, lips long, superior one inclined upwards, bifid, segments linear-acuminate; lower lip deflexed, trifid, segments linear-lanceolate.—*Botanical Magazine*, t. 4505.

PENTSTEMON AZUREUS. *Bentham.* A hardy herbaceous plant from California. Flowers bright blue, very handsome. Belongs to the order of Linariads (*Scrophulariaceæ*). Introduced by the Horticultural Society.

A smooth, glaucous, erect perennial, about two feet high. Leaves linear-lanceolate, quite entire upon the stem, but near the root oblong and slightly heart-shaped at the base. Flowering racemes about a foot long or rather less, slightly downy, with one short peduncle in the axil of each opposite bract, bearing from one to two flowers. The latter are rather more than an inch long, clear violet blue, much deeper in the limb than on the tube. This hardy perennial is stated by Mr. Bentham to have been gathered in the dry river beds of the Valley of the Sacramento. Hartweg wrote on his seed-papers that it was a mountain plant. It is very handsome as a border flower, but as its narrow foliage is not good, it is best grown among other species, such as Pelargoniums, &c.—*Journ. Hort. Soc.*

BEGONIA CINNABARINA. *Hooker.* A very handsome Bolivian plant with large nodding scarlet flowers. Introduced by Messrs. Henderson of Pine-Apple Place.

Extremely handsome; the contrast between the green stem and darker green leaves, with the deep bright red of the long and stout peduncles and stipules, together with the red or rather deep large cinnabar-coloured flowers, is very striking, and renders this the most desirable of all the species for cultivation: add to which, it blooms very freely in an ordinary stove, and continues long in flower. Stem erect but zigzag, stout, succulent, pale green, slightly downy, as are the leaves and petioles. Leaves on rather short, stout, terete, green petioles, from four to six or seven inches long, obliquely ovate (the young ones much plaited and edged with red), lobed at the margin and doubly serrated, the minute teeth red. Stipules ovate membranaceous, acuminate, red. Peduncles a span and more long, rather stout, terete, deep and bright red, bearing a panicle of six large handsome flowers, which as well as the ovaries and pedicels and ovate bracts are rather pale red or deep cinnamon colour. The ultimate pedicels are ternate, drooping, of which the central flower is male, the lateral ones female.—*Botanical Magazine*, t. 4483.

The interior of the ovary not being described we are uncertain whether this is a true Begonia or not.

UROPEDIUM LINDENII. *Lindley.* An extraordinary herbaceous orchid, with all the habit of the long-tailed Lady's-slipper. Native of New Granada. Introduced by Linden.

This, which is the most remarkable of the terrestrial orchids yet known, is thus described in the *Orchidaceæ Lindenianæ:* This singular and magnificent plant grows on the ground in the little woods of the Savannah, in that elevated part of the Cordillera which overlooks the vast forests at the bottom of the Lake of Maracaybo, and situated on the territory of the Indians of Chiguará, at the height of 8,500 feet. Sepals oval-lanceolate, pale yellow, streaked with orange. Petals purple, orange at the base. The flower may be from fifteen to twenty inches long in its greatest diameter. Leaves thick and fleshy; June, 1843. The habit of this curious plant is exactly that of Cypripedium insigne. The leaves are a foot long, blunt, unequally two-toothed at the point, shining, spotless, and longer than the downy scape. The bracts are two, of which the exterior is spathaceous, compressed, blunt, coriaceous, and much longer than the inner. The peduncle is six inches long, downy and one-flowered. The upper sepal is ovate-lanceolate, and four inches long; the lower are united into one of the same form, but rather wider. The petals are linear-lanceolate, extended into a long, narrow tail, and are probably eight or nine inches long, but in my specimens they are broken. The lip is of exactly the same form, but broader, and like the sepals is shaggy at the base.

The sepals are white streaked with green, and more than three and a quarter inches long; the petals and lip full twenty-one inches long, very velvety at the base, white streaked with green; the tails have the colour of wine lees.



THE ROSE COLOURED VARIETY OF THE COMMON WATER LILY.
(NYMPHÆA ALBA VAR: ROSEA.)

[PLATE 11.]

THE ROSE-COLOURED VARIETY OF THE COMMON WATER LILY.

(NYMPHÆA ALBA, VAR. ROSEA.)

A Hardy Aquatic Plant, belonging to the Natural Order of NYMPHÆACEÆ, *from* SWEDEN.

THIS plant is, no doubt, simply a coloured variety of the common Water Lily, so well known as one of the most beautiful objects that adorn our ponds and ornamental waters. Being structurally identical with Nymphæa alba, no further details as to its specific character are necessary. How it originated is not clear, but it is said to have been found in Lake Fagertärn, in Sweden, in the waters of which it seems to have alone been met with.

Additions to our hardy plants are always acceptable, as, apart from the individual beauty which they may possess, the fact of their being able to thrive and resist the effects of our winters without any protection at once places them within the reach of every one who has a garden. The subject of our illustration has still further claims, inasmuch that hardy aquatic plants of an attractive character are comparatively few in number, and new additions to them are much less frequent than in any other division of flowering subjects.

The cultivation of this and kindred plants is so simple and generally understood as to require few details, as when once fairly established under such conditions as suffice for their wants, they usually take care of themselves, and go on increasing. As a matter of course, they must have room enough to admit of full development if anything like an effective display is to be expected. And where introduced, it is always necessary to see that they do not get smothered with any of the weedy, quick-growing water plants which often take possession of ornamental pieces of water, and sometimes choke everything of a better character. To grow this and the common form of the plant satisfactorily, it is better that the water should not be over-deep, nor the opposite of too shallow: from one and a half to two feet is a good depth; and it is also requisite, so far as possible, to maintain this depth regularly by arranging the outlet—that is, the overflow from the pond in which the plants are grown.

[PLATE 12.]

THE LONG-TAILED LADY'S-SLIPPER.

(CYPRIPEDIUM CAUDATUM.)

A Stove Herbaceous Plant, from PERU, *belonging to the Natural Order of* ORCHIDS.

Specific Character.

THE LONG-TAILED LADY'S-SLIPPER.—Stemless. Leaves distichous, sword-shaped, leathery, smooth, spotless. Scape erect, bearing several flowers, longer than the leaves. Bracts like spathes, as long as the ovary. Sepals ovate-lanceolate, gracefully curved. Petals extended into very long pendent wavy linear tails. Lip oblong, glandular on the edge, near the base. Sterile stamen broader than long, two-lobed, with bristles on the ends of its lobes.

Cypripedium caudatum: *Lindley, Genera and Species of Orchidaceous Plants*, p. 531.

THIS extraordinary plant was for many years known only by a few fragments preserved in herbaria. At last the collector Hartweg met with it in wet, marshy places near the hamlet of Nanegal, in the province of Quito; but he did not send it home. Subsequently the collectors of Messrs. Veitch of Exeter, and of Mr. Linden, fell in with it; and to the latter is, we believe, owing its introduction to Europe in a living state.

For the opportunity of figuring it we have to acknowledge our obligations to Mrs. Lawrence, who first succeeded in bringing it into flower, and who exhibited it to the Horticultural Society.

The accompanying plate is a faithful representation of the plant as it flowered at Ealing Park, but is far from giving an adequate idea of the natural beauty of the species. The great sheathing bracts, which in South America are as large as those of a Heliconia, were mere abortions; and we learn from drawings brought home by Mr. Warczewitz that the flowers are very much larger and finer-coloured in its native swamps. The stains on the lip, for instance, are numerous, and of a rich warm brown, giving quite another appearance to the flowers. On one of Hartweg's dried specimens are remains of six flowers of this sort, placed at the end of a scape more than two feet high.

The petals are the extraordinary part of the species. In most Lady's-slipper flowers they are short, and little distinguishable from the sepals; but here they extend into the most curious narrow tails, which hang down and wave in the wind, in a manner of which we have in gardens no other such example, not even in the genus of Strophanths. What adds to the curiosity of these singular appendages is the fact, first remarked by Mrs. Lawrence, that they are quite short when the flower begins to open, and that they acquire



THE LONG TAILED LILY LADY'S SLIPPER.
(CYPRIPEDIUM CANDATUM.)

length day by day at a rate which would enable an attentive observer to see them grow. This lady has favoured us with some measurements, made by herself, from which we learn that—

When the flower first opened, the petals were	¾ of an inch long.
During the second day they grew	3¼ of an inch.
On the third day they advanced	4 inches more.
The growth of the fourth day amounted to	4½ inches.
And on the fifth day they still extended	5½ inches.

At this time the growth is supposed to have ceased, the petals having in four days lengthened 17¾ inches, and being 18½ inches long when full grown.

Another example of this tendency to lengthen the petals into tails, but in a less degree, occurs in the "sedgy Lady's-slipper," mentioned further on. And a third case is found in the strange genus Uropedium, in which not only do the petals turn to tails, eight or ten inches long, but their example is followed by even the lip, which for this purpose flattens itself, entirely unfolds, and pushes itself out into a long and narrow tongue. It may be useful to state that this Uroped, also a very curious flower, has the habit of the "bannered Lady's-slipper," and was found wild by Linden, growing in the soil of little woods in the savannah which occurs on the high part of the Cordillera that looks down upon the vast forests of the Lake of Maracaybo. Its elevation above the sea was 8,500 feet, in the territory of the Chiguará Indians, where the specimens now before us were gathered in flower, in June, 1843.

The reason of this marvellous structure seems to deserve inquiry at the hands of some proficient in the doctrine of final causes. There is evidently a tendency towards it in other Orchids, as, for example, in Brassias, some Oncids, the genus Cirrhopetalum, and the long-tongued Habenarias.

The long-tailed Lady's-slipper belongs to a section of the genus which is distinctly characterised by having no foliage on the sides of the stem, instead of which a number of thick narrow leaves spring up from its very base, and allow the flowering stem to rise freely into the air.* They all inhabit tropical countries, but are generally found at considerable elevations above the sea. As most of them are in cultivation, the following enumeration may be useful:—

1. The Handsome Lady's-slipper. (*C. venustum*, Wallich.)

From the mountains of Sylhet, and the Khasiya hills of Continental India.

Leaves spotted with deep green and purple, almost as long as the scape. Lip and sepals veined with green. Petals stained with purple, and fringed with long hairs.

2. The Java Lady's-slipper. (*C. Javanicum*, Reinwardt ined.)

Found wild in Java.

Leaves speckled with green, and much shorter than the scape. Sepals veined with green. Petals distinctly spotted with purple on a green ground, tipped with pink, and fringed with long hairs. Lip deep olive-green, not veiny.

* The stemless Lady's-slipper (*C. acaule*) has the leafless scape of this division, together with the broad, thin-ribbed leaves of the other, and serves to connect the two. It is here intentionally passed by.

3. The Bearded Lady's-slipper. (*C. barbatum*, Lindley.)

On Mount Ophir, where it was found by Mr. Griffith.



THE LONG-TAILED LADY'S-SLIPPER.

Like No. 1, but the upper edge of the petals is marked with purple glands, and all the parts of the flower are much stained with rich purple.

4. The Purple-stained Lady's-slipper. (*C. purpuratum*, Lindley.)

Grows wild in wet mossy crevices near the summit of Mount Ophir.

Also in the way of No. 1. But the dorsal sepal is convex, white with purple veins, and all the other parts are deeply stained with purple. The leaves are much shorter and more oblong than in any of the preceding.

5. Low's Lady's-slipper. (*C. Lowei*, Lindley.)

In Borneo and Sarawak.

Remarkable for the extension of the petals into two long spathulate bodies blotched with purple. When wild it has 8-10 flowers on a scape.

6. The Glandular Lady's-slipper. (*C. glanduliflorum*, Blume.)

New Guinea, on old decaying trunks of trees.

Leaves like those of No. 7. Flowers large, about 2 or 3 on a scape, with long twisted petals, bearing hairy glands on their edge; and a large pale pink lip, which bears within it a pair of long reversed horns.

7. The Bannered Lady's-slipper. (*C. insigne*, Wallich.)

Mountains of Sylhet and Khasiya.

Leaves narrow, not stained. Flowers large, with an orange-coloured lip, a broad dorsal greenish sepal, edged with white, and long spreading flat greenish petals.

8. Lindley's Lady's-slipper. (*C. Lindleyanum*, Schomburgk.)

Damp meadows of Guayana, among Sundews, Sunjars (*Heliamphoras*), and similar plants.

A stout, hard leaved plant, with a stem 2 feet high, covered with rusty down. Flowers brown, in a one-sided panicle, having coarse spathaceous bracts at their base. Lip small, oblong, green. A very curious, but not handsome plant.

9. The Sedgy Lady's-slipper. (*C. caricinum;* foliis angustissimis coriaceis acutis unicostatis scapi tomentosi longitudine, racemo plurifloro, bracteis ovatis spathaceis glabris ovario glabro brevioribus, sepalis lateralibus connatis labelli longitudine, petalis in caudam acuminatis.)

Found in Bolivia by Bridges.

10. The Long-tailed Lady's-slipper. (*C. caudatum*, Lindley.)

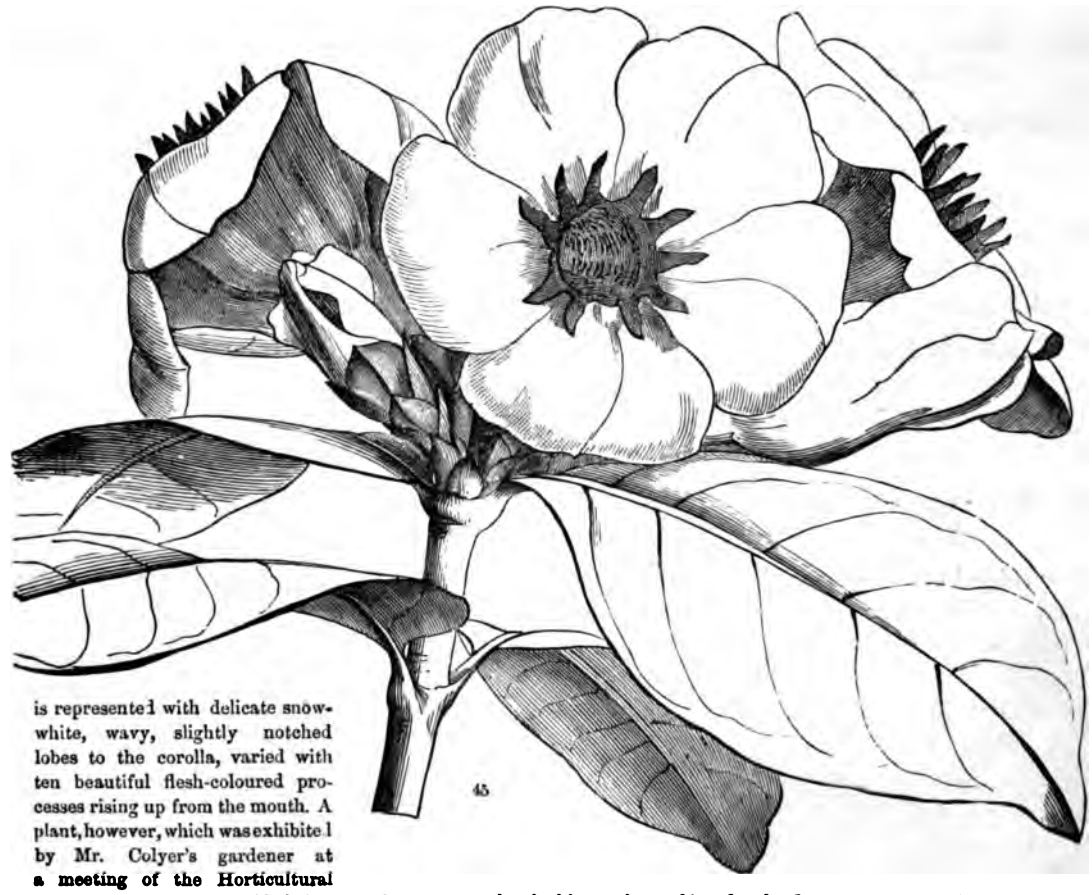
Mountains of Peru.

The subject of this Plate. The opposite woodcut gives some idea of the appearance of the plant in a wild state.

GLEANINGS AND ORIGINAL MEMORANDA.

ROUPELLIA GRATA. *Hooker.* A hothouse climbing plant from Sierra Leone, with large coarse white flowers. Belongs to the Dogbanes (*Apocynaceæ*). Introduced by Mr. Whitfield. (Fig. 45.)

This plant produces what is called "Cream-fruit" in Sierra Leone; a name that has probably arisen from its yielding an abundance of cream-like juice when wounded. We should, however, be unwilling to put such a dainty in the mouth; for it can hardly be destitute of the acridity for which its race is notorious. In the *Botanical Magazine* it



45

is represented with delicate snow-white, wavy, slightly notched lobes to the corolla, varied with ten beautiful flesh-coloured processes rising up from the mouth. A plant, however, which was exhibited by Mr. Colyer's gardener at **a meeting of the Horticultural Society by no means justified the flattering account that had been given of it; for the flowers were great leathery bodies, not white, but dirty, like half-soiled kid gloves; while the delicate flesh-coloured teeth proved to be ten huge, ugly, brown**

tusks. It is difficult to imagine a flower with a more uninviting appearance. As to the fragrance attributed to it, we perceived nothing more than a sickly or at least by no means agreeable odour. When compared with a Stephanote, or a Beaumontia, it shrinks into insignificance, notwithstanding the large size of the flowers. The following account of its habits is given in the *Botanical Magazine*, t. 4466:—"This handsome, climbing, shrubby plant requires to be grown in a warm and moist hothouse. It is of free growth, and being a smooth clean-leaved plant, not subject to insects, is well adapted for a trellis, or to train up a pillar or rafter; and it will also form a bushy plant grown in a pot, if supported by a wire trellis or by neat stakes. Good fresh loam with a little leaf mould will suit it. As it is a fast grower, it requires water freely during summer; but care must be taken that the soil does not become stagnant. It is propagated by cuttings, which strike root readily when placed under a bell-glass, and the pot plunged in bottom-heat. It appears to be a shy flowerer; for although we have known it in cultivation for several years, we have not heard of its producing flowers except in the collection above mentioned."

CYMBIDIUM PARISHII. A stove Epiphytal Orchid, of which a good deal has been heard previous to its blooming in this country, where it seems to have been flowered by several growers near the same time; first of all, we believe, in the fine collection of W. Leech, Esq., Oakley, Fallowfield, Manchester, where, under the care of Mr. Swan, it has grown remarkably well.

Professor Reichenbach's description, given in the *Gardener's Chronicle*, N.S., vol. x., p. 74, is as follows:—"The plant quite fulfils what Mrs. E. Parish's accomplished figure had promised. The flowers, indeed, are smaller than those of C. eburneum, but they are far more gay in colour. The petals and sepals are of the same ivory-white. The lip has an orange middle zone, and an orange disc to the anterior lobe, both painted with purplish-brown spots. The side lobes of the lip have numerous spots of a most lively purplish-violet, which give the chief charm to the flower. The back side of the column is white, the edges are yellow, and the front side yellow, with some brownish-purplish spots on the foot." It is a native of Burmah. We may add that we have not had an opportunity of seeing the flower, but Mr. Swan says it is a most beautiful thing, and succeeds with him in the Cattleya house, giving it in the growing season a copious supply of water.

DIEFFENBACHIA SHUTTLEWORTHII. This fine species is another of Mr. Bull's importations from the United States of Colombia. It possesses a stout, robust habit of growth, with massive broad foliage; the broad silvery band in the centre of each leaf is not regularly defined in the outline, but runs feathered irregularly into the margin of bright green, giving the whole a very handsome appearance. These Dieffenbachias are easily-grown plants, requiring stove-heat. They are readily propagated by cuttings made of sectional pieces cut from the thick fleshy stems, or when the tops have been removed the lower buds break into growth, and these, if severed with a heel of the old stem, will root quickly in sand, shaded, kept moderately moist and warm. They will succeed in either peaty soil or loam, to which is added a liberal sprinkling of sand. They need shading from the sun in bright weather.

Plant erect in habit. Leaf-blades spreading, a foot or more in length, four inches broad, lanceolate, bright green; the costa ivory-white; the leaf-surface for about half an inch on each side marked with a silvery band, the outer margin of which is fringed, breaking out into feathered lines and freckles.—*Bull's Catalogue*, 1878.

ALOCASIA THIBAUTIANA. This is one of the importations of Messrs. Veitch of Chelsea, from Borneo. It is not unlike the well-known A. Lowii, but appears to be altogether a finer plant, which is saying quite enough to give it a character, as of the very many fine-leaved subjects that have been imported within the last quarter of a century, few have become more general favourites than A. Lowii. We have no doubt but that similar treatment to that under which A. Lowii, A. Veitchii, and others of a like character succeed will suit this newer kind—that is, a brisk stove-heat, with a moist atmosphere, plenty of light, a thin shade from the direct rays of the sun, and for the roots a compost of turfy peat, sphagnum, pot-shreds, and sand, the pots one-third filled with drainage.

Larger leaves than A. Lowii, ovate-acute, deeply cordate, the basal lobes rounded, not sharply pointed. The veins are thick, brilliant white on a black-green ground, thus forming a most effective contrast.—*Gardener's Chronicle*, N.S., vol. ix., p. 527.



WARREA BIDENTATA. *Lindley* (*aliàs* W. Lindeniana, *Henfrey*). A handsome terrestrial Orchid from New Granada, with the habit of Warrea tricolor. Flowers pale cream-colour, with a purple lip. Introduced by Mr. Rucker before 1844. (Fig. 46, the lip magnified.)

This well-marked species was originally described in the *Botanical Register* for 1844, at p. 76 of the miscellaneous matter. It has already been reproduced in the *Gardener's Magazine of Botany*, p. 177, under the new name of W. Lindeniana. It is not a native of Peru, as is stated in that work, but was found by Mr. Linden "on the ground in the thick forests at the foot of the peak of Tolima, at the height of 4,000 feet," as is stated in the *Orchidaceæ Lindenianæ*, No. 96. It is said to have some pink in its flowers when wild, but that colour has not yet been observed in cultivation. The form of the lip, which is remarkable, is shown in the annexed cut.

ADIANTUM WILLIAMSII. This Adiantum is a native of Peru, where it is said to be found at an elevation of 12,000 feet, whence Mr. B. S. Williams received it. From its general appearance it is evidently nearly allied to A. chilense, but it is of larger growth than that species. Amongst the great number of ferns that have been introduced of late years it is somewhat difficult to select the best, but, so far as general usefulness goes, there can be no question that the kinds such as this, which will succeed with greenhouse treatment, are much to be preferred to the more tender stove species. It was awarded a first-class certificate by the Floral Committee of the Royal Horticultural Society, South Kensington, May 2nd, 1877, and was also exhibited by Mr. Williams at the provincial show of the Society held at Preston in the summer of 1878.

Fronds tripinnate, triangular, membranaceous, bright green, glabrous; pinnæ ovate, distant; pinnules subrotund, that is, cut straight across the base with the pedicel nearly central, rarely towards the apex, slightly trapeziform, occasionally provided slightly at the angles so that the basal line is concave, the margin entire or very slightly divided into 3—4 lobes, crenately notched between the sori, the sterile portions with an erose diaphanous margin; sori 8—10 elongate reniform, or lunate, occupying the whole of the semicircular outer edge; indusium rugose membranous, pale green, entire; stipes castaneous, semiterete, and, as well as the slender rachides, smooth and glossy; caudex slowly creeping.—*Gardener's Chronic'e*, N.S., vol. x., p. 45, with Fig.

ÆCHMEA VEITCHII. Discovered in both New Granada and the United States of Colombia in 1874, by the collectors Wallis and Shuttleworth. It appears to be nearly allied to Æ. Mariæ Reginæ of Wentland. It is a handsome species, requiring a stove temperature, and will succeed with the same treatment, as to soil, moisture, air, and shade, during very bright weather, that most of the other kinds need. Even when not in flower its finely-curved leaves give to it an elegant appearance, which is still further enhanced by its stately erect flower-spike when in bloom.

Leaves twelve to fifteen, forming a dense basal rosette, horny in texture, reaching a length of twelve to fifteen inches, and a breadth of under two inches above the middle, so deeply channelled that they are semicircular in horizontal section in the lower half, bright green, and quite naked all down the face, thinly white all down the back, without any transverse bands, deltoid-cuspidate at the point, the edge bordered all down with close, small, erecto-patent, lanceolate, brown teeth. Scape about a foot long, central, entirely hidden by the imbricated, lanceolate, adpressed, green, horny-toothed bracts. Flowers in a dense oblong head, three or four inches long and under a couple of inches in diameter, each subtended by a squarrose, bright scarlet, horny-toothed bract; upper bracts without any flowers in their axils. Ovary globose, a quarter of an inch long, the side nearest the axis much less convex than the outer one. Sepals lanceolate-deltoid, under half an inch long, bright scarlet in the lower flowers of the head, white in upper ones, acute, but not spine-tipped; petals pale, lingulate. Stamens about as long as the calyx, those opposite the petals furnished with a pair of small scales at the base.—*Botanical Magazine*, 6329.



HARDY AZALEAS. SEEDLING VARIETIES

[PLATE 13.]

HARDY AZALEAS, SEEDLING VARIETIES.

No. 1, JUDITH; 2, METEOR; 3, SILVIO.

Deciduous Shrubs of Garden origin.

THESE beautiful additions to our out-door spring flowering shrubs are the result of Mr. Anthony Waterer's perseverance in cross-breeding. Having accomplished so much in the same direction with Rhododendrons, he has turned his attention to hardy Azaleas, with what results the accompanying plate, from Mr. Macfarlane's truthful drawing, gives ample evidence. In breadth of petals and substance of the flowers they are an immense stride in advance of the old Ghent varieties, and in delicacy of colour they are not surpassed by any of the greenhouse varieties, of which there are now such a host of Indian and Chinese descent. They are the outcome of many years' work in crossing and re-crossing the best formed and most promising, chosen from amongst thousands that Mr. Waterer has raised.

No. 1, JUDITH, is a beautiful variety; white, suffused with pink, and deep orange on top petal.

No. 2, METEOR. A grand flower, of large size and substance, the petals almost as broad as those of the tender greenhouse sorts; red, with pale-orange blotch on top petal.

No. 3, SILVIO. Quite equal to the others in both size and substance; amber, flaked and suffused with reddish-pink, top petal dark yellow.

One advantage these Knap Hill-seedlings possess over the ordinary Ghent kinds is that they make a considerable amount of leaf-growth before the flowers open, which adds much to their effective appearance. Of still more importance is their blooming somewhat later than the Ghent varieties, and in consequence of this being more likely to escape the spring frosts that frequently make such havoc in plants which bloom early, through which cause the Japanese Azalea mollis varieties are so liable to have their flowers cut off.

The natural free disposition to flower which they have is also much in their favour, and renders them equally desirable plants for small as well as large gardens. Taking the whole family of Azaleas collectively, as introduced to Europe from different parts of the world, including the Chinese, American, and Indian species, there is scarcely a genus of plants we could point to that has yielded so readily to the manipulation of the hybridist, or that has

given such an immense number of distinct handsome varieties adapted for greenhouse cultivation, as also out of doors. The results of crossing the Indian and Chinese species are seen in the all but endless numbers of greenhouse kinds now so well known and extensively cultivated. To these may now be added those that have sprung from crossing the small hardy North Chinese species amœna with the ordinary greenhouse sorts, the seedlings from which cross are so well adapted for forcing. And now we have every promise of the deciduous hardy kinds giving us a greatly improved set of plants that will keep pace in the out-door garden with what has been accomplished in the tender kinds.

The cultivation of these hardy Azaleas is simple in the extreme. Peaty soil they like best, but where this is not obtainable a good substitute will be found in rotten leaves, which, if freely mixed with ordinary loamy soil, will be found to answer their requirements.


ED CATTLEYA



VARIETIES OF THE RUBY-LIPPED CATTLEYA
(CATTLEYA LABIATA.)

[PLATE 14.]

VARIETIES OF THE RUBY-LIPPED CATTLEYA.

(CATTLEYA LABIATA.)

Stove Epiphytes, Natives of the CARACCAS, *belonging to the Order of* ORCHIDS.

Specific Character.

THE RUBY-LIPPED **CATTLEYA.—Stems between club-shaped and spindle-shaped, furrowed. Leaves solitary, oblong. Spathe as long as the peduncle. Sepals linear-lanceolate, acute, coloured. Petals membranous, oblong lanceolate, wavy, much broader. Lip obovate, crisp and wavy, emarginate, smooth on the disk.**

C. labiata, *Lindley, Collectanea Botanica*, t. 33; *aliàs* C. Mossiæ, *Hooker in Bot. Mag.*, t. 3669.

THESE magnificent varieties of the Ruby-lipped Cattleya are still among the rarities of horticulture. For the white one we are indebted to the noble collection at Syon; for the blotched sort to J. J. Blandy, Esq., of Reading.

The Ruby-lipped Cattleya is that on which the genus was founded. It was first sent to Europe by Mr. Swainson, who discovered it in Brazil, and used its stems as a kind of "dunnage" to set fast certain chip boxes of lichens, &c., which he transmitted to Sir William (then Mr.) Hooker. Where he gathered it we are not informed, but we learn something precise on the subject from Mr. Gardner. This lamented botanist found it on the edge of a precipice on the eastern side of the Pedro Bonita Mountain, about fifteen miles from Rio Janeiro, where it grew along with Vellozias, the Mackay Zygopetalum and Dipladenes (*Journ. of Hort. Soc.*, vol. i., p. 196); and also on the Gavea, or Topsail Mountain, so called from its square shape, and well known to English sailors by the name of Lord Hood's nose. *Travels in Brazil*, p. 28. This plant has a pale lilac tint with a very broad rich stain of ruby-red overspreading all the front half of the lip except the very edge.

Since that time large importations have been made from the Caraccas and New Granada of a Cattleya with pinker flowers, of much larger size, the veins of whose lip alone were crimson, while the spaces between were yellowish or white or both; some of them had crimson veins run together. Upon these specimens Sir William Hooker proposed to establish a new species, to which he gave the name of *Mossiæ;* and it must be owned that the peculiarities of the Caraccas plants seemed sufficient to justify that conclusion. We are however obliged to say, after a most careful comparison of large numbers of this *Cattleya Mossiæ*, that we can find no distinctive characters in it except size and colour.

It would be useless to attempt an enumeration of the varieties that exist of this plant, unless for the purposes of a Florist. We therefore merely present those now figured with the names of the White Ruby-lipped Cattleya (*C. labiata candida*) and the Blotched (*C. l. picta*).

The following account of the climate in which *Cattleya labiata* grows, furnishes cultivators with hints which they will readily apply to practice. "At this elevation (2000 feet) the climate is very much cooler than it is at Rio. In the months of May and June the thermometer has been known to be as low as 32° just before day-break: the lowest at which I observed it myself was one morning at the end of May, when, at 8 o'clock a.m., it indicated 39°. The highest to which it rose during the six months I resided there, was in the end of February, when, one day, it indicated 84° at noon. The hot season is also the season of rains, and it is then that the mass of the Orchids, and almost every other tribe of plants, come into flower. From these facts cultivators ought to take a lesson in the cultivation of the productions of this and of similar regions. If the difference of temperature between the season of wet and that of flowering be so great in the state of nature, it must be obvious that to grow them well, artificially, a somewhat similar state of things ought to be observed. The greater part of the Orchids which are sent to England from the Organ Mountains, grow in the region of the above temperature, the elevation being from 3000 to 3500 feet above the level of the sea. In the account which I shall presently give of my visit to the summit of those mountains, which is more than double that elevation, I shall have occasion to mention several species which may be cultivated in a much cooler temperature. Another reason why no general rule can be laid down for the cultivation of these plants, is, the great variety of soil and situation which they affect in their native country; some, like *Zygopetalum Mackaii*, are terrestrial, and grow in open exposed places; others, like *Warrea tricolor*, are also terrestrial, but grow in the deep virgin forests; some, like *Zygopetalum maxillare*, are only found to inhabit a particular tree, while others are found indiscriminately on all kinds of trees, on rocks, and even on the ground; some, like *Laëlia cinnabarina*, grow in moist places on exposed rocks; while others, like *Cyrtopera Woodfordii*, grow in a similar soil, but in shaded places; some, like *Maxillari apicta*, grow on the most dry and exposed rocks; while others, like *Grobya Amherstiæ*, grow also on dry rocks, but generally in the shade."—*Gardner in Journal of Hort. Soc.*, i. 277.

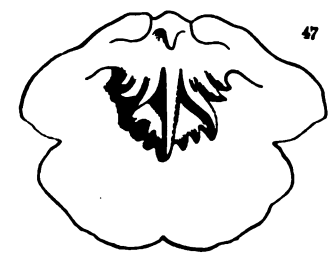
GLEANINGS AND ORIGINAL MEMORANDA.

ANTHURIUM TRIFIDUM. There appears to be some uncertainty as to the origin of this plant, which has been said to come from the Indian Archipelago, as also from tropical America. But under any consideration it is a stove species, and a desirable plant.

Leaves deeply trifid, stem short, concealed by withered scales; petioles elongate, slender, nearly terete, very faintly flattened upon the inner face, of warm reddish-brown colour, ten to eighteen inches in length; leaf-blade ten to fifteen inches long, broadly deeply trifid, base broadly rounded, subtruncate, or with a broadly cuneate exit into the geniculus, which is half to three-quarters of an inch long; median lobe oblong-lanceolate, acuminate, from the base of the leaf to its apex ten to sixteen inches, three and a half to four and a half inches broad; lateral lobes obliquely oblong-ovate, obtuse, somewhat falciform, shorter than the median lobe, from the geniculus to their apex eight or ten inches, all deep shining green above, paler beneath, three principal nerves divergent from the apex of the petiole, prominent beneath; principal lateral veins from median nerve are about nine to twelve on each side; peduncle slender, erect, rather shorter than the petioles, red or reddish-brown in colour, as is the more or less spreading, or reflexed, oblong, lanceolate, acuminate spathe, which is slightly shorter than the slender, terete, shortly stipitate spadix. Perianth segments four, broadly roundate, or obovate-quadrate, concave, thickened above, overarching the four stamens; filaments much flattened, obovate; stigma obtusely four-angled.—*Botanical Magazine*, 6339.

WARREA DISCOLOR. *Lindley*. A one-flowered Orchid from Costa Rica: sepals and petals pale lemon-colour, tinged with purple; lip dull purple. Introduced by Mr. Warczewitz. (Fig. 47, the lip magnified.)

A very distinct species. The sepals, which are one and a quarter inches long, are straw-coloured, the lower straight, concave, and deflexed, the upper erect, rolled back at the point, pressed close to the petals, and with them forming an arch over the column and lip. The petals are straw-coloured at the base, dull purple at the upper part. The lip has a nearly circular outline, but is so concave as not to present that form until flattened; it is slightly three-lobed, of a deep, dull, velvety purple colour, with, at the base, a roundish oblong yellow appendage, which adheres to the lip, and is divided at the edge into strong diverging teeth, five of which terminate so many distinct ribs. The column is yellow, shaggy in front, with an anther sloping forward, and a subulate rostel. The pollen masses are four, plano-convex, in pairs at the end of a broad, flat, thin caudicle, furnished on either side with a lateral tooth. (A singular monstrosity here occurred in the two posterior pollen masses, which had grown together into one by a narrow neck.) A remarkable species, the single flowers of which resemble a Lycaste, but their pollen-apparatus and lip-appendage are exactly those of Warrea. Upon this point it may be useful to explain that in Lycaste the caudicle is subulate, and the lip-appendage a truncate plate near the middle lobe of the lip, while in Warrea the caudicle is broad and flat, and the lip-appendage ribbed, fringed, and stationed at the very base of the lip.—*Journ. Hort. Soc.*, vol. iv.


47

CEANOTHUS PAPILLOSUS. *Torrey and Gray.* A hardy Californian bush, with bright blue flowers, belonging to the order of Rhamnads. Flowers in June and July. (Fig. 48.)



An evergreen bush, covered with coarse hair and resinous tubercles, in a wild state forming a compact mass of branches, in cultivation growing longer and weaker. Leaves small, deep green, narrow-oblong, obtuse, with a single mid-rib, and numerous lateral veins, covered with down on the under side. Flowers in small roundish terminal stalked heads, bright blue as in C. azureus.—*Journ. Hort. Soc.*

This has now been ascertained to be capable of bearing our London winters without protection. But in places exposed to the sun it suffers from frost much more than under a north wall or at the back of rock-work. Very pretty.

CEANOTHUS RIGIDUS. *Nuttall.* A hardy evergreen purple-flowered Californian bush, belonging to the Natural Order of Rhamnads. Introduced by the Horticultural Society. (Fig. 49.)

A stiff branching dark green evergreen bush ; said to grow 4 feet high when wild. Young branches downy. Leaves small, truncate, spiny-toothed, subsessile, very shining and smooth on the upper side ; on the under pale and netted. This network is produced by numerous short branching veins, in the interspaces between which are deep pits, reaching half through the parenchym, and each closed up by a dense ring of white converging hairs. Such pits are placed pretty generally in a double row between each of the principal lateral veins. The flowers appear in small clusters or umbels at the end of very short spurs. They are deep purplish violet, not blue, and less showy than those of C. dentatus or C. papillosus. The species seems to be even more hardy than the two last-named sorts, for it has borne the winter uninjured and unprotected both in sunny and in northern aspects ; and, in fact, the specimens left unprotected are quite as healthy as those left under glass all the winter.—*Journ. Hort. Soc.*, vol. v.

These Ceanothus are suitable for training against low walls, similarly to Cratægus pyracantha. They sometimes suffer in severe winters, but nevertheless are deserving of cultivation.

DIPTERACANTHUS SPECTABILIS. *Hooker.* A very fine herbaceous Acanthad from Peru, with deep purple blue flowers of large size. It requires a warm green-house, or stove. Flowers in August. Introduced by Messrs. Veitch and Son. (Fig. 50.)

Sir W. Hooker states this to be unquestionably the largest flowered plant of the genus, if not of the order. It grows 2 feet or more high, much branched, and erect. Leaves nearly sessile, ovate, acuminate, ciliated, slightly pubescent on the surface, rather strongly veined and reticulated. Flowers sessile or very nearly so, two together from the axils of the upper leaves, large, very showy ; more than two inches across. Calyx quite without bracts, deeply cut into 5 erect, subulate lobes, much shorter than the funnel-shaped curved tube of the corolla. The limb of the latter very large, purple-blue, veined, the 5 lobes rounded, spreading, crenate, and somewhat waved at the margins. This is found to succeed in a temperature inter-

mediate between that of the stove and greenhouse, and grows freely in any kind of light garden soil. Like many of the tropical *Acanthads*, after flowering, it becomes thin and naked. It propagates freely by cuttings. The young plants should be kept in small pots during winter, and receive very little water. In the spring they require to be shifted into a large pot, where they will soon make rapid progress, and produce a succession of large fine blue flowers.—*Botanical Magazine*, t. 4494.



50

THIEBAUDIA SCABRIUSCULA. *Humboldt and Bonpland.* A greenhouse evergreen bush, belonging to the order of Cranberries (*Vacciniaceæ*). Native of New Granada. Flowers crimson, tipped with green. Flowered at Syon. (Fig. 51.)

A very pretty spreading evergreen shrub with slender downy branches, and broad oblong almost cordate triple or quintuple ribbed leaves, slightly downy on the under side. The flowers appear at the ends of the branches, in drooping cones 1¼ inch long, composed of resinous, shining, slightly downy, pink, membranous oblong scales. The corolla is oblong, rather more than half an inch long, hairy, rich crimson, with a clear green tip. The species is nearly related to T. bracteata, and strobilifera, very fine shrubs still to introduce, from which it differs in its hairy flowers and other circumstances. T. pubescens, another species with flowers in cones, is a much larger plant, also with smooth, not downy, corollas; at least such is the case in specimens now before us from Hartweg's Collections. This should form a very useful gay addition to spring shrubs of its class. It was raised at Syon from seeds received from Mr. Purdie.



51

GYNOXYS FRAGRANS. *Hooker.* A hothouse perennial plant, from Guatemala, with very fragrant yellow flowers, appearing in December. Stems trailing. Belongs to Composites. Introduced by Mr. Skinner. (Fig. 52.)

Stems long, climbing, perennial, with succulent branches, showing a disposition to root at their base. Leaves rather distant, on long petioles, ovate or approaching to lanceolate, acute, of a rather fleshy texture, dark green. The flower-heads are rather large, very fragrant, and form a terminal, and in the lower part leafy, corymbose raceme. A coarse soft-wooded scandent plant, having a large, thick, fleshy root, of the nature of a tuber. It grows freely in a mixture of light loam and peat or leaf-mould, and, by its rapid growth and clean habit, is well adapted for covering trellis-work in the hothouse, especially as it is not liable to be attacked by insects. It increases readily by cuttings; but these, on account of their soft, succulent, nature, must not be kept too close, or they will damp off before they produce roots.—*Botanical Magazine*, t. 4511.

HOYA CORIACEA. *Blume.* A Java climbing shrub, with the habit of Hoya carnosa, and umbels of yellowish flowers. A stove plant, flowering in August. Introduced by Messrs. Veitch and Co. (Fig. 53.)

Discovered by Dr. Blume in mountain woods on the western side of Java. Mr. Thomas Lobb detected it in the same island, on Mount Salak. Everywhere glabrous. Stem branched, twining, taper. Leaves on short thick petioles, which are glandular above at the setting on of the blade, which latter is almost exactly elliptical, or approaching to ovate, acute, between coriaceous and fleshy, acute or shortly acuminated, ribbed, with rather indistinct veins. Peduncles longer than the leaf, pendent, bearing a large umbel of numerous flowers, brown in the state of the bud, much paler when fully expanded. Pedicels very obscurely villous. Sepals subulate, much shorter than the corolla, which is glabrous and glossy externally, within pale tawny, and downy. The lobes triangular, acute. Coronet white, with a dark brown eye: leaflets ovate, gibbous at the base, obtuse, the apex a little curved down.—*Botanical Magazine*, t. 4518.

HOYA PURPUREO-FUSCA. *Hooker.* A remarkable twining stove plant, with small umbels of richly tinted purple and grey flowers. A native of Java. Flowers in September. Introduced by Messrs. Veitch and Son. (Fig. 54.)

Said to be common in the woods of Java. Sir W. Hooker compares it with the Cinnamon-leaved Hoya, and with the great-leaved (*H. macrophylla*), "but in the latter the leaf is reticulated between the nerves, the staminal crown (coronet) has the leaflets much more acuminated, and the colour of the flowers is quite different." It is a glabrous twining and branching shrub, everywhere (except the corolla) glabrous. Branches often throwing out short fibrous roots. Leaves on very thick brownish petioles, 4 to 5 inches long, exactly ovate, acute, or shortly acuminate, thick, fleshy, 5-nerved, the nerves all diverging from the base, and having a gland at the base where set on to the petiole. Peduncles axillary, shorter than the leaf, occasionally rooting, and bearing a dense many-flowered umbel. Corolla rotate, ashy-brown, downy and hirsute above, cut into 5 roundish and shortly acuminated lobes. Coronet of 5 ovate, fleshy, rich purple-brown, acute leaflets, nearly plane at the top, convex below.—*Botanical Magazine*, t. 4520.

LILIUM NITIDUM. A Californian lily imported by Mr. Bull, which no doubt will find a place in the gardens of those who form collections of these magnificent plants, that of late years have been reinstated in the favour of the gardening public. The comparative neglect into which they had for a long time fallen can only be traced to the disposition cultivators often exhibit to discard really fine old families of flowering plants in favour of newer introductions, often of doubtful merit.

Bulb transversely oblong, subrhizomatous, with crowded, adpressed, lanceolate, white scales, one and a half inches long. Stem one and a half feet long below the inflorescence, stout, terete, glabrous, purple in the lower part, green upwards, bearing four whorls of leaves and several additional scattered ones. Leaves up to twenty in a whorl, lanceolate, bright green, glabrous, one and a half to two inches long, under half inch broad at the middle. Panicle deltoid, half to one foot long, made up of ten to twenty flowers; lower pedicels two to three inches long, spreading into cernuous tips in the flowering stage, arcuate, ascending in the fruiting stage, the small green lanceolate bracts confined to the base. Perianth bright yellow, one and a half inches long; segments lanceolate, under half inch broad, permanently connivent in a cup in the lower half, revolute in the upper half, furnished with copious small red-brown dots. Filaments above one inch long; anthers oblong, bright yellow; ovary oblong, half inch long; style as long as the ovary, much curved.—*Gardener's Chronicle*, N.S., vol. xiv., p. 198.

CENTRADENIA FLORIBUNDA. *Planchon.* (*aliàs* Donkelaaria floribunda of *Gardens.*) A dwarf half-shrubby plant from Guatemala, belonging to the Melastomads; with numerous lilac flowers. Introduced by Van Houtte and Co.

A very pretty species, much more worth growing than the Rosy Centradene, now common in gardens. The leaves are long, deep green, delicately tinged with violet on the underside, and full 2¼ inches long; having a pendent position they present both surfaces to the eye. The flowers are produced in much abundance, exhibit various tints of lilac, and produce a charming effect.—*Flore des Serres*, No. 453.



ACHIMENES GHIESBREGHTII *of the Gardens.* Origin unknown. A stove herbaceous plant with handsome scarlet flowers. Belongs to the Gesnerads. Introduced by Mr. A. Henderson.

Stems erect, deep purple brown, with a few scattered hairs. Leaves opposite, stalked, oblong-lanceolate, rugose, convex, coarsely serrated, not unlike those of the larger stinging-nettle. Flowers solitary, axillary, with a slender hairy peduncle, twice as long as the leafstalks. Calyx smooth, equally 5-parted. Corolla deflexed, nearly cylindrical, gibbous at the base on the upper side, 1¼ inch long, bright scarlet, with an oblique regular limb, and a circular throat. Disk, a lobed fleshy ring. Stigma large, two-lobed, very hairy. This is a neat, distinct, and rather slender kind, requiring the same treatment as the old A. coccinea, and easily increased by the small scaly rhizomes. It grows about 8 or 10 inches in height, and flowers from June to August. It is very handsome.—*Journ. Hort. Soc.*, vol. v. *With a figure.*

ONCIDIUM NIGRATUM. An orchid from Guiana, with cream-coloured flowers spotted with blackish-brown, arranged in a branched panicle. Introduced by Mr. Loddiges.

O. nigratum (BASILATA) paniculâ ramosâ, sepalis linearilanceolatis undulatis acutis æqualibus, labello triangulari postice rotundato apice angustato acuto, cristâ multituberculatâ, columnæ alis angustis subdentatis basi productis.

A very curious and distinct species, received from Sir Robert Schomburgk many years since, and at last flowered by Mr. Loddiges. It is nearly allied to O. phymatochilum. The blossoms grow in branched panicles, and are about as large as those of O. incurvum. The colour of the sepals and petals is pale yellow or cream colour, with a few irregular brownish black blotches. The lip is brighter yellow, with a brown stain or two below the point.

ONCIDIUM PHYMATOCHILUM. A beautiful orchid, supposed to be derived from Mexico, with long green sepals and a white lip. Flowers in April.

O. *phymatochilum* (BASILATA) racemo subpaniculato, sepalis linearibus acuminatis apice recurvis lateralibus longissimis, labelli auriculis convexis dilatatis crenatis lobo intermedio unguiculato ovato acuminato basi multituberculato, columnæ alis semicordatis acuminatis.

Under this name is now not uncommon in gardens a charming orchid, supposed to have been obtained from Mexico, with erect, narrow, somewhat panicled racemes of greenish flowers having a snow-white lip. Some years since we received it from Messrs. Loddiges and the late Mr. Clowes. It has oblong, 2 edged, not furrowed, olive green pseudobulbs slightly tinged with purple, and surrounded by scales as long as themselves, which, when young, are olive green spotted with crimson. The leaves are of thin texture and vary in form from linear-lanceolate to oblong. The flowers are remarkable for the great extension of the lateral sepals, on which account, and because of their green colour spotted with chocolate brown, they have much the appearance of belonging to some Brassia. The lip is pure white, with yellow tubercles and a few stains of the same colour near the base.

CUPHEA IGNEA. *Alphonse De Candolle.* (*aliùs* C. platycentra *of Gardens.*) A Mexican perennial, with long scarlet flowers.

It is stated in the *Flore des Serres* that the true Broad-spurred Cuphea (*platycentra*, Bentham) is not the plant known under that name in Gardens; and consequently M. Alphonse De Candolle has given the latter the appropriate name of the Fiery Cuphea (*C. ignea*).

CATTLEYA MARSTERSONIÆ. A handsome hybrid Orchid, like so many others originating in the Chelsea establishment of Messrs. Veitch. It is a cross between Cattleya labiata and C. Loddigesii.

The pseudo-bulbs are intermediate in form between the two parents. Shorter than those of C. Loddigesii, and not so thick as existent in C. labiata. Like the former, it is two-leaved; the leaves, about six inches long, are similar in shape and substance to those produced by C. Loddigesii. Flowers stout and fleshy in substance, more than usually flat, showing the whole inner surface. Petals and sepals similar in colour to those of C. labiata. Lip white at the base, faintly suffused with yellow across the middle, and with a large deep purple blotch covering the lower extremity. It is a very pretty variety.

FUCHSIA VENUSTA. *Humboldt.* A handsome greenhouse shrub, with lanceolate leaves in threes, and long solitary pendent salmon-coloured flowers tipped with pink. A native of Peru. Introduced by Mr. Linden. (Fig. 55.)

This is one of the best of the Peruvian Fuchsias, for the introduction of which we are indebted to Mr. Linden, from

whom we received fresh flowers last autumn. Hartweg found it commonly near Santa Fé de Bogota, but, owing to the mismanagement of that collector, its seeds, like nearly all else that he brought home with him, perished in the hold of a sugar ship. It has long narrow lanceolate deep green leaves, quite toothless at the edge, usually growing in threes. The flowers appear singly in the axils, and are full 3 inches long, while the stalk measures $2\frac{1}{2}$ inches more. The tube of the calyx has the form of a lengthened cone, its lobes being tipped with light emerald green. The petals, which are also salmon-coloured, are lanceolate, wavy, not rolled up, but a little turned back at the point, and something longer than the calyx.



55

BERBERIS WALLICHIANA. *De Candolle.*



56

See ante, p. 8. (Fig. 56.)

This flowered with Messrs. Veitch and Son, and proves to be even more handsome than was anticipated, the flowers being large, and deep yellow, arranged as in the accompanying figure.

DODECATHEON INTEGRIFOLIUM. *Michaux.* A hardy herbaceous plant, belonging to the Order of Primworts. Flowers purple and yellow. Native of California. Introduced by the Horticultural Society.

A dwarf stemless plant, with a few long narrow, almost spathulate, undivided leaves, and a slender scape, bearing a single nodding flower, very like that of the common species, and of the same purple colour, with a yellow eye and dark purple anthers. Such was the plant in the Horticultural Garden. Upon looking, however, to the wild specimens, we find that it becomes much more vigorous when older, bearing as many as three flowers on a scape, or, according to Sir William Hooker, eleven or twelve; in which case it becomes as interesting as the old and well-known species, so frequent in gardens. A damp, rich, shaded American border suits it best; and there it may be expected to grow without difficulty.—*Journ. Hort. Soc.*, vol. v. *With a figure.*

CYPERUS LAXUS VARIEGATUS. A variegated sport from the ordinary green C. laxus. Exhibited by the New Horticultural Company, at the Royal Horticultural Society's meeting October, 1880, where it was awarded a first-class certificate.

It is in all respects like the green type in form, but is deeply and persistently variegated with white, occupying three-fourths of the entire surface of the leaves, not unlike the well-known hardy grass, Gardener's garters (Arundo donax versicolor). It will require a warm house to grow in.

ARALIA CHABRIERII. This is a handsome and distinct looking plant, we understand, from the South Sea Islands. Like many others of the Aralias, it is extremely elegant in appearance, especially whilst in a small state.

The leaves on a small plant, which thickly clothe the slender, erect-growing stem, are simple, narrow, about a quarter of an inch broad, and nine or ten inches in length; drooping, strong, and hard, deep green and shining above, paler beneath; mid-rib prominent, deep red above, and beneath as well. The plant is disposed to form side-branches much freer than most of the family.

SARRACENIA ATROSANGUINEA. A native of North America, introduced by Mr. Bull.

This is a tall, slender-habited kind. The pitchers, which attain near a yard in height, grow rapidly wider near the top, the edges of which recurve outwards. The lid is somewhat small proportionate to the size of the orifice, over which it forms a hood. The green ground-colour of the upper part of the pitcher is relieved with a clearly-defined reddish-brown netted veining on the inside, which extends part way up the lid, where it assumes the character of a deep, solid blotch of dark chocolate-red that has a lustrous surface, giving the plant quite a distinct appearance from any other species we have seen. Flowers pale yellow.

BOMAREA OLIGANTHA. Is a native of Peru, introduced by Herr Leichtein of Baden-Baden, and there bloomed by him. We have not seen the flower, but it is said to be nearly allied to B. Halliana, differing from it in some respects, most noticeable of which are its broad, short leaves and less number of flowers. It is a climbing species, requiring greenhouse treatment.

Stems wide-climbing, slender, glabrous. Leaves with a short, winged, twisted petiole, oblong, acute, about two inches long, membranous in texture, with close ribs and obscure cross-bars, bright green on the upper surface, ciliated on the ribs beneath. Flowers one or two to an umbel, on simple, flexuous, glabrous pedicels, about an inch long. Bracts small, lanceolate. Perianth regularly funnel-shaped, about an inch long above the small globose ovary; outer segments slightly shorter than the inner, oblanceolate, under quarter of an inch broad, obtuse, with a minute pilose apiculus, unspotted, reddish on the outside, yellow within; inner segments obovate-cuneate, with a claw as long as the blade, broadly rounded at the tip, with a distinct cusp, three-eighths of an inch broad, bright yellow, with abundant small, claret-brown spots. Three longest filaments nearly as long as the perianth limb; anthers oblong, one-twelfth of an inch long; filaments subulate.—*Gardener's Chronicle*, N.S., vol. viii., p. 648.



[PLATE 15.]

THE BLUE BOLLEA.

(BOLLEA CŒLESTIS.)

A Stove Epiphyte, from TROPICAL SOUTH AMERICA, *belonging to the Order of* ORCHIDS.

Specific Character.

BOLLEA CŒLESTIS.—Leaves six to ten on a shoot; sheath flattened, pale, three to four inches long by one broad; blade six inches long by one broad, oblong-lanceolate, acuminate, bright pale green. Peduncles one from each leaf, one-flowered, six inches long, very stout, flexuous. Flowers four inches in diameter. Sepals broad, acute, violet-purple, with a broad, much deeper band beyond the middle and undulate edges, yellow towards the tips, all acute; dorsal smaller, obovate, hooded; lateral larger, more oblong. Petals like the dorsal sepal, and about the same size, but paler coloured. Lip with a short claw and ovate limb, which is deeply cordate at the base, its margins are recurved, and tip produced and revolute; it is deep violet beyond the middle, paler with yellowish margins towards the base; disk golden yellow, much raised, and rounded in front, deeply grooved, as if formed of about twenty thick, parallel, raised connate plates, with rounded tips. Column very large, arching over the disk, violet, obtuse, hairy in front within.

Botanical Magazine, 6458.

WE are under an obligation to Sir Trevor Lawrence for the opportunity of figuring this splendid variety of Bollea cœlestis, which is the highest coloured form of this fine Orchid we have seen. Bolleas appear to grow as freely as weeds in the Burford Lodge collection, regarding which it is not saying too much in describing the plants collectively as managed with a skill and intelligence such as merit the success that is attained.

Bolleas and Pescatoreas seem so nearly allied as to merge into each other, with little to distinguish them, except a slight structural difference, scarcely noticeable or appreciable from a cultural point of view. Blue or purple are colours less frequently met with than others in Orchids; hence, combined with their intrinsic merits as distinct and handsome flowers, the high estimation the Bolleas are now held in. The flowers, so far as we have had a chance of seeing them, are produced singly on a stem, but when well managed, each growth gives such a number that the plants when in bloom are the complete opposite of some Orchids that produce handsome individual flowers, yet so sparingly as to much reduce their worth.

So far as regards their requirements in cultivation, it is evident that Bolleas need a considerable amount of heat whilst growing, with more shade and atmospheric moisture than

many Orchids succeed with. But by this it must not be understood that it is requisite to subject them to the darkened, hot, stifling atmosphere that provokes apparent luxuriant growth for a short time, but which almost invariably ends in disease, after which their end is not far off. Composed as they are principally of leaves and roots, with little of the bulb-like stem which so many Orchids possess, they do not require, neither are they able to bear, the severe drying process that many species with large fleshy stems want during their season of rest. Pot culture will most likely be best adapted to meet the needs of these plants, for although, in common with most other Epiphytal species, they will no doubt grow on a block with sphagnum, still pots, well drained and filled with good porous material, composed of fibrous peat, sphagnum, and broken crocks or charcoal, will doubtless be the best medium for the roots to lay hold of.



DOUBLE CHINESE PEACH TREES.
(AMYGDALUS PERSICA, FLORE SEMIPLENO.)

[PLATE 16.]

DOUBLE CHINESE PEACH TREES.

(AMYGDALUS PERSICA; FLORE SEMIPLENO.)

Hardy Shrubs from CHINA, *with the Habit of the Common Peach.*

THE Chinese and Japanese have long been known to possess several fine double varieties of the common Peach tree. Such plants appear in their rude drawings, among their embroidery, and upon their paper hangings. Travellers talk of the exquisite beauty of these things when tortured into dwarfness. They are probably intended by Kæmpfer under the name of *Prunus flore rubro*, and *Prunus flore pleno*, of which last he says: "This is cultivated because of the beauty and abundance of its flowers. The older and more distorted or deformed it is, the more it is prized." Thunberg speaks also of a single white and a double red variety, adding that the Peach is cultivated everywhere in gardens, because of the *beauty of its flowers*.

Among the valuable and authentic Chinese drawings in the possession of the Horticultural Society—no doubt the finest collection in Europe—the following varieties may be readily distinguished:—

1. Large semi-double Crimson, with flowers as large as a Sasanqua Camellia; very handsome, petals acute.
2. Large semi-double Rose; like the first, but the colour not deeper than that of a China Rose.
3. Large semi-double red; with flowers as large and deep red as No. 1, but with blunt petals, somewhat irregularly lobed.
4. Small semi-double Red; like the next, but of a deep rich rose colour; very pretty.
5. Small semi-double White, with very round petals, not much longer than the stamens.

When Mr. Fortune was sent to China by the Horticultural Society, he was particularly instructed to procure these things; and the result has been the acquisition of the two beautiful varieties now represented—namely, a SEMI-DOUBLE CRIMSON, which is probably the first of the foregoing list, and a SEMI-DOUBLE WHITE, which is not found there. These flowered in the garden of the Society, and proved to be great acquisitions. They have in all respects the habit of the common Peach tree, except that they are more excitable, in which respect they approach the Almond; and consequently they are better suited for forcing or for flowering under glass, than in the open air; because, although hardy, they suffer from wet cold nights, which brown their flowers and ruin their

gay appearance. It is not improbable, however, that seedlings may be in time produced from them in which this precociousness will disappear; for, being semi-double, it is to be expected that they will occasionally ripen fruit.

That semi-double Peaches will fruit has been pointed out by Monsieur Jacques, in the Journal of the Horticultural Society of Paris; and this writer adds the curious fact that the seedlings come true from seed. His experiment is thus detailed: "In the autumn of 1845 I put in sand twelve stones of double Peach trees, and I planted them in March, 1846. By the end of May five only came up, and by the end of the year were from 16 to 18 inches high. In the spring of the following year I pinched off some of the lower branches, and the plants continued to grow at the same rate. Political events in the beginning of 1848 prevented my transplanting them; they, therefore, went on growing in the seed-bed. In the course of that year they became a yard and half and two yards high, and were pretty well covered with branches from top to bottom. On the 5th of April, 1849, four out of these five plants were covered with flowers all along the branches, and at almost every bud; and the whole of the flowers appear to be the same as those of the common budded double Peach trees. Another interesting fact is, that this result had not to be waited for, for these shrubs were in full flower by the time they were three years old."

GLEANINGS AND ORIGINAL MEMORANDA.

PASSIFLORA MEDUSÆA. *Lemaire.* A stove species of unknown origin, with red and yellow flowers. Introduced by M. Van Houtte. (Fig. 57.)

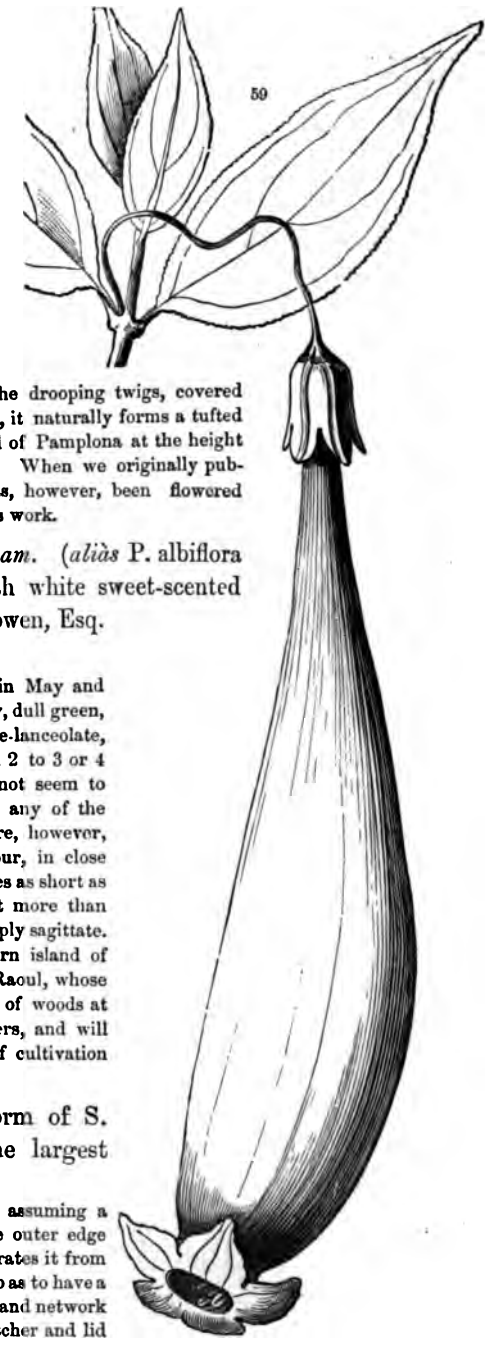
One of the slit-leaved species, with a slender habit, and pretty starry flowers, the rays of which are orange the first day, and lilac or rose the next. According to M. Lemaire, who named it on account of "quelque ressemblance avec la tête de la fille de Phorcus, après que ses cheveux eussent été changes en serpents par Minerve," these flowers have a strong penetrating odour in which there is nothing disagreeable. But M. Planchon, whose nose seems to be differently constituted, asserts that this smell, which becomes perceptible at the period of the change of colour, is most disgusting.—*Flore des Serres*, 528.



CUPHEA CINNABARINA. *Planchon.* A half-shrubby plant from Guatemala, belonging to the order of

Loosestrifes (Lythraceæ). Flowers crimson or deep purple. **Introduced by M. Van Houtte.** (Fig. 58.)

M. Planchon thinks this different from the *C. Llavea*, long since known in gardens, distinguishing it by its panicled flowers, the colour of the anthers, and some other circumstances. It seems to be a good bedding plant. Two varieties are figured, one with rich crimson, the other with purple flowers.—*Flore des Serres*, 527.



Lisianthus Princeps. *Lindley.* A greenhouse shrub, with very long scarlet, yellow and green flowers. A native of New Granada. Belongs to the Gentianworts. Introduced by Mr. Linden. (Fig. 59.)

This must be one of the noblest plants in existence. Its long flowers, the size of the accompanying figure, are rich scarlet melting into yellow at either end, with an emerald green 5-lobed limb; they hang in clusters of four from the ends of the drooping twigs, covered with firm deep green opposite leaves. According to Mr. Linden, it naturally forms a tufted shrub 2 or 3 feet high, growing at the entrance of the table land of Pamplona at the height of 10,000—11,000 feet above the sea. *Flore des Serres*, t. 557. When we originally published this plant we knew it only from dried specimens. It has, however, been flowered by Mr. Linden, and is beautifully represented in M. Van Houtte's work.

Parsonsia heterophylla. *Allan Cunningham.* (*aliàs* P. albiflora *Raoul.*) A New Zealand twining evergreen shrub with white sweet-scented flowers. Belongs to the Dogbanes. Introduced by J. R. Gowen, Esq. (Fig. 60.)

A twining evergreen greenhouse plant, flowering abundantly in May and June. Stem covered with fine down, pale yellow; leaves leathery, dull green, slightly downy, wavy, very variable in form; linear-lanceolate, ovate-lanceolate, obovate, or even spathulate, often repand, varying in length from 2 to 3 or 4 inches. These singular diversities in the form of the leaves do not seem to be confined to any particular parts of the plant, but appear on any of the branches, and all intermingled; the short spathulate leaves are, however, most usual on short lateral shoots. Flowers pale cream-colour, in close one-sided naked panicles, rather sweet-scented. Calyx three times as short as the corolla. Corolla urceolate, with a revolute 5-cleft border, not more than a quarter as long as the tube. Anthers without any tails, but simply sagittate. According to Cunningham, this plant is common in the northern island of New Zealand, at Hokianga and Wangaroa, in shady woods. M. Raoul, whose P. albiflora can scarcely be different, found it on the outskirts of woods at Akaroa. It is rather a nice addition to our greenhouse climbers, and will probably prove hardy in the south of England. For purposes of cultivation it is much superior to P. variabilis.—*Journ. Hort. Soc.*, vol. v.

Sarracenia flava ornata. A handsome form of S. flava, with tall stout pitchers, equal in size to the largest varieties of S. flava.

The ground colour of the pitchers is pale green, gradually assuming a yellower tint towards the mouth, which is much distended, the outer edge rolled back. The lid is proportionately large; the part which separates it from the top of the pitcher has its outer edges completely rolled back, so as to have a cylindrical appearance when seen from the front. The deep lines and network of dark purple on the inner surface of the upper part of the pitcher and lid are so marked and distinct from the ground colour as to show their fine tint very decidedly. It is a North American introduction of Mr. Bull's, and one of the finest of the side-saddle flowers.

ACINETA DENSA. An epiphyte from Costa Rica, with a pendulous short close raceme of yellowish, somewhat fragrant flowers. Blossomed in the nursery of Messrs. Lane and Son of Berkhampstead. (Fig. 61.)

A. *densa*; racemo oblongo denso nigro-furfuraceo, bracteis ovario duplò brevioribus, labelli hypochilio concavo intus versus apicem dente obtuso tomentoso aucto, metachilii lobis lateralibus truncatis basi angustioribus appendice plano ovato subtridentato angulis posticis sinuatis, epichilio lineari-oblongo basi verrucoso, columnâ dorso tomentosâ.

This is one of M. Warczewitz's collection, imported in 1849 by Mr. Skinner. It was found at Turialba, in Costa Rica, and is very near the Barker Acinete, notwithstanding the appearance of dissimilarity caused by its dense, not long and narrow, raceme. The flowers are pale yellow, slightly spotted externally with crimson. The lip is yellow at the point, spotted with broad blotches on the lateral lobes, deep crimson in the space between the lobes occupied by the appendage. As regards structure, this Close-flowered Acinete differs from the Barker A. in having a more concave hypochil, the tooth of which is not notched at the point; an entire epichil remarkably warted at the base, and the lateral lobes of the metachil not at all rounded, with the posterior angles of the intermediate appendage sinuous, and not extended into a long subulate process.



DIEFFENBACHIA LEOPOLDII. This plant, introduced by Mr. Bull from South America, is one of the finest and most distinct of all the Dieffenbachias.

The stem is not quite so thick as in some others of the species, dark green in colour. The petioles are short and stout, supporting the leaves in a more upright position than is usually found in Dieffenbachias. The leaves, oblong-ovate in shape, are about fifteen inches long, of a very dark green, the upper surface shining; the stout mid-rib is of a clear decided white, forming a distinct and prominent band right through, which contrasts well with the ground colour.

TULIPA SCHRENKI. A hardy bulbous plant from Central Asia, nearly allied to, and in appearance not unlike, the old well-known T. gesneriana. It is evidently a variable plant in colour; in some cases the flowers are yellow, in others red, like the Kew example, described as follows.

Bulb ovoid, an inch in diameter, with brown membraneous tunics; shortly pilose inside the upper parts. Stem about half a foot long, bearing a single erect flower, and three or four lanceolate leaves, with a rather glaucous surface and obscurely ciliated margins, the lowest and largest in the cultivated specimens about four inches long and an inch and a half broad. Peduncle erect, puberulent, three to four inches long. Perianth yellow or bright red with yellow throat, funnel-shaped, with more spreading segments than in gesneriana, an inch long in the wild, nearly two inches in the cultivated specimens; all the segments similar, oblong, obtuse. Stamens half as long as the perianth; anthers lemon-yellow, longer than the glabrous filaments. Ovary cylindricotrigonous, nearly as long as the stamens; stigma middle-sized, a little broader than the diameter of the ovary.—*Botanical Magazine*, 6439.

RENANTHERA STORIEI. From the character and description given of this new Renanthera, it will no doubt be an acquisition, inasmuch as it has the reputation of being a remarkably free bloomer, contrasting favourably in this important matter with the well-known Chinese species, R. coccinea, one of the very finest Orchids in existence, but a plant that requires to be so differently treated, to induce its flowering, to the generality of other Orchids, that most growers give it up as unmanageable. The subject of our notice is a Philippine species, and no doubt will succeed under the warm treatment needed by the generality of Orchids that hail from that part of the world.

Flowers one-sixth shorter than R. coccinea, sepals and petals much broader, lip larger. The side lacinise of the lip have a triangular, not a retuse, upper border. Very floriferous. Flowers brightest yellow and vermilion. Lip dark.—*Gardener's Chronicle*, N.S., vol. xiv., p. 296.

CYPRIPEDIUM LUCIDUM. A stove Epiphytal Orchid of hybrid origin. Raised by Mr. Seden, at Messrs. Veitch's Chelsea establishment; the result of crossing C. villosum with C. Lowii.

Leaves intermediate between those of the two species. The flowers have the cruciform position of sepals and petals remarkable in C. Lowii; upper sepal greenish-brown at the base and in the middle, where there are many brownish spots, from which a brown middle line runs towards the apex; inferior sepal greenish-yellow, rather narrow. The petals, from a narrow base, are much dilated, shining inside like the upper sepals, minutely ciliate; the superior half inside is brownish-violet, the interior (basilar) part more yellowish, with many brownish-violet spots at the base. The lip is nearly that of villosum, but chiefly brownish-violet. Small cartilaginous plates in the interior base of the sinuses of the horns with the chanelled nail. Staminodium nearly triangular, a middle tooth stands at its retuse anterior side, the lateral parts obscurely bilobe, with short violet hairs at its base and sides. Ovary covered with whitish hairs.—*Gardener's Chronicle*, N.S., vol. viii., p. 521.

CROSSANDRA GUINEENSIS. A handsome small growing stove plant, introduced by Messrs. Veitch of Chelsea from West Tropical Africa. In addition to its pretty pink flowers, the leaves are beautifully veined. It is an acceptable addition to the smaller section of heat-requiring species, which are so desirable for associating with the many recently discovered things that attain a large size.

A low herb, with a woody root stem, two to six inches high, erect, rather stout, rarely branched, light red, cylindric, covered, as well as the petioles, with a furfuraceous pubescence. Leaves two or four pairs, horizontal, shortly petioled, three to five inches long, elliptic, sometimes obovate or oblong, obtuse, base contracted obtuse, or cordate membranaceous, deep green above, with golden reticulated nerves, beneath reddish, with pubescent midrib and nerves; petiole a quarter of an inch, stout, reddish. Spike solitary, sessile, three to five inches high, striate; apex pungent, many-flowered; bracts many pairs, half to three-quarters of an inch long, imbricating, appressed, hard or coriaceous, lanceolate, acuminate, with a setaceous point, green, glabrous, closely striate, quite entire, or ciliate, serrate towards the top; flowers pale lilac; sepals lanceolate, acuminate, quite entire; corolla tube exserted, very slender, incurved, glabrous, limb five-lobed, lobes acuminate, posterior smallest, ovate, lateral larger, more broadly elliptic-ovate, anterior largest obovate; stamens towards the mouth of the corolla; filaments very short; anthers oblong, acute; margins of cells ciliate; ovary glabrous; style hairy; stigma small.—*Botanical Magazine*, 6346.

VERONICA LONGIFOLIA, VAR. SUBSESSILIS. A hardy herbaceous Japanese plant, bearing stout erect spikes of handsome blue flowers. Undoubtedly one of the handsomest of the genus.

An erect branching under-shrub, two to four feet high; stem cylindrical; branches ascending, puberulous. Leaves two to four inches long, very shortly petioled, dark green, ovate or ovate-lanceolate, deeply acutely serrate; nerves strong and puberulous beneath. Racemes terminal, and on lateral branches, six inches to nearly a foot long, subsessile or peduncled, striate, erect, very dense flowered; rachis pubescent. Bracts linear-lanceolate. Pedicels about as long as the calyx. Sepals ovate-oblong, or linear, subacute, ciliolate. Corolla one-third of an inch in diameter, bright amethyst-blue; tube very short; segments spreading, rounded, concave. Filaments slender, exceeding the corolla-segment. Style filiform; stigma capitate. Capsule rather longer than the sepals, turgid, two-lobed.—*Botanical Magazine*, 6407.



ABUTILON INSIGNE. *Planchon.* A greenhouse shrub, with large round heart-shaped leaves.

attracted general notice. So unlike, indeed, are they to the ordinary form of Rhododendron blossoms, that the 'Gardeners' Chronicle,' in recounting the prizes of the day, seemed to imply that this was probably no Rhododendron at all!" It is a native of Mount Ophir, Malacca; elev. 5000 feet, and seems a ready flowerer. Branches bare of leaves below, and knotted where they had been inserted. Leaves crowded towards the upper part of the branches, lowermost ones subverticillate, on short petioles, obovate-oblong, rather acute, glabrous, nearly coriaceous. Umbel terminal, many-flowered. Peduncles 1-flowered, short, with small reddish bracteas at the base, and, as well as the very small, shallow, obscurely 5-lobed calyx, lepidote. Corolla salver-shaped, white, slightly tinged with rose below the limb; the tube two inches long, straight, scarcely gibbous at the base: the limb spreading, of five obovate wavy lobes, almost exactly equal. Stamens 10. Filaments filiform, downy, as long as the tube. Anthers red (forming a red eye, as seen at the mouth of the white corolla). Ovary oblong-cylindrical, lepidote, 5-celled, glandular at the base. Style rather shorter than the stamens, filiform, downy. Stigma dilated, obtuse, green.—*Botanical Magazine*, t. 4524.

We do not think that the "Gardeners' Chronicle" expressed an opinion adverse to this plant being a Rhododendron. And we can answer for this, that any observation which was made had no relation to the mere form of the corolla. There are points connected with the alpine Indian Rhododendrons which have attracted no attention, and yet deserve serious examination. What, for instance, is the meaning of the *continuation* of the style and ovary, instead of the usual *articulation*? And what is the equivalent among true Rhododendrons of the epidermoidal glands, capped with scurfs, which lie everywhere among the stomates of this and some other Rhododendrons? These matters are of higher interest than the comparative length of the tube of a corolla.



67



RHODODENDRON, SEEDLING VARIETY.

[PLATE 17.]

RHODODENDRON, SEEDLING VARIETY.

(A. B. MITFORD.)

A Hardy Evergreen Shrub, of Garden origin.

THIS is one of the latest and best of the many fine Rhododendrons that have been raised by Mr. Anthony Waterer at the Knap Hill Nursery. And whether we look at the head of bloom, taking it collectively, or the individual flowers of which it is composed, it would be difficult to imagine what further improvement was possible. In size, substance, and breadth of petals, the flowers are all that could be desired, whilst the ground colour is a deep glowing crimson, the upper petals, from their base over a good portion of their surface, are heavily spotted with black; added to which, the habit of the plant is excellent, the foliage ample, and as hardy as the common R. ponticum. This last is a matter of the greatest importance in a Rhododendron, as when the leaves are at all subject to injury by frost the variety may be set down as useless, however fine the flowers may be, for bloom in these plants without the accompaniment of good foliage is of little account. We more particularly urge this as many fine-flowered kinds are so deficient in healthy leaves after a severe winter that the defect seriously militates against the effect of their bloom. The inability of a good many otherwise fine varieties of Rhododendron to resist the effects of frost in their foliage is clearly traceable to their parentage. Most of the high-tinted forms owe their origin to the Indian species, which have been crossed with the Gibraltar species ponticum, the North American catawbiense, and others; but of all that have been in this way used, none seem to impart such a hardy constitution to the offspring as R. catawbiense. The seedlings descended from this sort are as hardy in their leaves as the native British ivy. Another matter of equal importance in a hardy Rhododendron is that its time of flowering is sufficiently late in the spring to be after all danger from frost is over; in this many of the first-raised seedlings were deficient, as, for instance, those resulting from R. caucasicum.

So much have Rhododendrons, of a character such as the subject of our plate, of late years come into general use for decorative planting in gardens, that they are fast taking the place of laurels and similar evergreen plants; and deservedly so, for when out of bloom their

leaves are all but equal to the laurel in appearance, and the gorgeous effect of their flowers has no equal in the whole range of blooming plants that we now have at command.

There is one important matter connected with their cultivation that never must be lost sight of: they cannot endure anything in the shape of lime or chalk in the soil in which they are grown. It was at one time supposed that Rhododendrons would not thrive in anything but peat, or, that failing, a substitute of leaf-mould or other decomposed vegetable matter; but this really is not the case, as they will do well in any close moisture-holding soil, especially if it is of a clayey character. Where the natural loam is too dry and sandy, if a liberal admixture of clay in a moderately pulverised state is added, Rhododendrons will grow well in it.



THE MAGNIFICENT MEDINILL.
(MEDINILLA MAGNIFICA.)


THE MAGNIFICENT MEDINILL
(MEDINILLA MAGNIFICA)

[PLATE 18.]

THE MAGNIFICENT MEDINILL.

(MEDINILLA MAGNIFICA.)

An Evergreen Stove Shrub from JAVA, *belonging to the Natural Order of* MELASTOMADS.

Specific Character.

THE MAGNIFICENT **MEDINILL.**—An evergreen erect bush, perfectly smooth in every part, with compressed four-winged branches, setose at the nodes. Leaves opposite, leathery, obovate-oblong, cordate, somewhat stem-clasping, suddenly pointed, triple-nerved below the middle, and with pinnate ribs at the base. Panicles terminal, long, pendulous, with whorled branches. Bracts very large, bright rose-colour, in whorls of four, many-nerved, deciduous. Flowers decandrous.

Medinilla bracteata *of the Gardens, but not of Blume.*

THE genus Medinill, founded originally by M. Gaudichaud, upon a shrub from the Marianne Islands, has become known in gardens by the introduction of the Showy and the Red-leaved species (*M. speciosa* and *erythrophylla*); the former a plant of striking beauty, the latter much less remarkable in appearance. These two may be taken as good examples of the genus generally, some of which are among the handsomest shrubs of the Malay Archipelago, while others would be passed by without notice. Many species have been made known by Dr. Blume and other Dutch naturalists. They seem all to inhabit the islands of Asia within the tropics, and to require a damp forest climate. Blume says that he has seen some of them climbing up the trunks of trees to the height of from 60 to 80 feet. He adds that they have a mucilaginous bark, which, stripped of its epiderm, is employed by the Malays for poultices, in dislocations and tumours, and that the subacid leaves are, in Celebes, boiled with fish.

The species now before us was imported from Java by Messrs. Veitch, and gained one of the large medals of the Horticultural Society. By some error it was called *Medinilla bracteata*, a name to which it has not the slightest claim; the plant once so called by

Dr. Blume, and now before us, not being even a member of the genus, but having been separated by the learned Dutchman himself as a DACTYLIOTE. (*Museum Bot. Lugd. Bat., p.* 18.) It is a poor insignificant thing, not worth cultivation. This, on the contrary, is one of the most noble-looking plants in India. Its massive leaves are nearly a foot long, and 4 or 5 inches broad, of a firm leathery texture, and of the richest green. From the ends of the branches hang down panicles, from 15 to 18 inches long, of rich glossy rose-coloured flowers, with purple petals and large many-ribbed bracts of the richest and clearest pink. Of the effect thus produced, the accompanying figure gives a correct, and in no degree exaggerated, illustration; it however only shows the lower part of a panicle—all that the page can be made to contain.

It is strange that so noble a form of vegetation should have escaped the acute eyes of the Dutch botanists; and yet we must conclude that it has done so, for no trace of it appears among the five or six and twenty species they have published. It certainly belongs to the section to which Blume gives the name of *Sarcoplacuntia*, well characterised by a short truncate calyx and fleshy placentæ; in fact is very nearly allied to the Showy Medinill (*M. speciosa*) itself. That such a plant as this should have remained unnoticed in an island so much explored as Java, is one of the best illustrations that could be produced of the inexhaustible richness of vegetation in the Malay forests.

What the true cultivation of this Medinill should be, can hardly be said to have been ascertained. Messrs. Veitch, we believe, have treated it as a hardy stove or warm green-house plant. According to Dr. Blume the species are mostly mountain plants (*Rumphia*, vol. i. pp. 11. &c.), and Reinwardt places Melastomads generally in such places. Speaking of the forests above 3000 feet in elevation above the sea, the latter author says:—"The singular Pitcher-plant here, hangs down from the lofty branches, and the broad and elegantly divided fronds of a beautiful Fern, the Dipteris, rise upon their slender stems. This elevated situation is more particularly characterised by the different kinds of laurels which here predominate. Java is especially rich in laurels, as well as in figs; these, with some Eugenias and other Myrtaceous plants, with a very large Gardenia, perpetually in flower, cover everywhere the highest spots in the mountains of India, associated with tall *Melastomas*, Rhododendrons, Magnolias filling the air with their fragrant perfume, and several sorts of oak. Intermixed with these, Orchids constantly prevail, and in great variety. It is only where the forest of laurels ceases, and the summit of the mountains becomes narrower and can no longer retain a covering of vegetable mould, when the air becomes more rarefied and colder, at an elevation of more than 7000 feet, that the appearance of the forest trees changes."—(*Journal of the Horticultural Society*, vol. iv. p. 232.)

GLEANINGS AND ORIGINAL MEMORANDA.

TRICHOSACME LANATA. *Zuccarini.* A woolly climbing Asclepiad from Mexico. Flowers small, dark purple, with long tails. Introduced by Messrs. Knight and Perry. (Fig. 68.)

This singular plant is so buried in wool that no part of its surface, except the face of the corolla, can be seen. The leaves are white, like a lamb's fleece. The stem is in the same state. The minute flowers grow in pendulous umbels at the end of a woolly reflexed flower-stalk. The singularity of the flower resides in the production of long, weak, feathery, purple tails from each lobe of the corolla; not, however, from the apex, as Zuccarini supposed. On the contrary, each lobe of the corolla is cut into two equal triangular teeth, and it is from the right hand tooth of each lobe that the tails proceed. They spring forth abruptly, wave in the wind in the most curious manner, and do not separate from the corolla without the application of some force. No doubt they are analogous to the tails of Strophanths; but what can they be for? Messrs. Knight and Perry received it from the Imperial Botanic Garden, St. Petersburg.



68

DIEFFENBACHIA SPLENDENS Another handsome, quick-growing stove plant, obtained by Mr. Bull from the United States of Colombia.

Stem deep green, relieved with a mottling of paler green. The leaves are large and pointed, the ground colour a medium shade of green, the broad mid-rib is white, and the whole surface of the leaf-blade is irregularly interspersed with creamy-white markings, well defined from the ground-colour, giving the whole a bright, fresh appearance.

NEPENTHES BICALCARATA. This very interesting pitcher-plant has reached this country in a living state through Mr.

Burbidge, who collected it in the Lazas River district for Messrs. Veitch, by whom it was exhibited before the Floral Committee of the Royal Horticultural Society, who awarded it a first-class certificate.

The young pitchers are clothed, like N. lanata, with a brownish woolly covering; the wings are prominent and deeply toothed. Immediately under the lid there are two well-defined horn-like appendages, slightly hooked downwards over the mouth of the pitcher. On the back of the neck of the pitcher there is also a hook-like appendage, covered with short hairs. It seems to form its pitchers freely, although the plant exhibited by Messrs. Veitch, as well as another example we have seen since, had not attained sufficient size to produce them near so large as they are said to be when fully grown.

CALANTHE VESTITA. *Wallich.* A very handsome terrestrial Orchid, from Burma. Flowers white, with a deep stain of bright crimson in the middle of the lip. Flowers in November. Introduced by Messrs. Veitch. (Fig. 69, *a* and *b*.)

This is scarcely less beautiful than C. sylvatica, see p. 17 of the present volume: and must be classed among the



finest of the terrestrial Orchids. The stems are fully two feet high, and like all the other parts are clothed with long soft hairs—very slender, long-jointed, of unequal thickness, and blunt, containing in their interior a brown fluid. The flowers are in loose, zig-zag racemes, with conspicuous ovate acuminate bracts. The sepals and petals are finally turned back so as to be nearly parallel with each other; they are snow-white, with a few hairs on the back of the first. The lip is bluntly 4-lobed, with a narrow short ear on each side at the base. The spur is very slender, and abruptly bent upwards, so that its point touches the lip. A large silver medal, the highest ever given in Regent Street, was awarded to this plant by the Horticultural Society on the 7th of Nov., 1848, when it was exhibited by Messrs. Veitch for the first time.

CYPRIPEDIUM SPICERIANUM. A very handsome small-growing species, one of the most beautiful of all the Lady's Slippers.

This species is near C. Fairrieanum, having the same narrow petals, curved down sideways, light green, with a purple middle line, and minute freckles on upper side over middle line, border much waved. Upper sepal transverse oblong, blunt, acute, margin reflexed, light green at the base, pure white above, with middle line purple. Lateral sepals acute, of a light greenish-white. Lip like C. Fairrieanum, but larger, olive-green, anterior part brown, side-lobes margined red. Staminode nearly square, with three blunt evanescent lobes in front, mauve, with white anterior border, yellow in centre.—*Gardener's Chronicle*, N.S., vol. xiii., p. 365.

STERIPHOMA PARADOXUM. *Endlicher;* (*aliàs* Capparis paradoxa *Jacquin;* *aliàs* Stephania cleomoides *Willdenow*). A small stove shrub of great beauty belonging to the Capparids, with bright yellow flowers. Native of Venezuela. (Fig. 70.)



70

A plant of ancient introduction, figured many years since by Jacquin in his account of the plants of the Imperial Garden at Schœnbrunn. Re-introduced by M. Karsten, it has found its way into modern gardens. It grows naturally to the height of a yard or two. The long-stalked, simple, ovate-lanceolate leaves are deep green. The flowers grow in a close raceme. The calyx is downy with star-shaped hairs, 2-lobed, and deep golden yellow. The petals, which extend a little beyond it, are 4, and much paler yellow. The stamens, 6 in number, are curved downwards and fully 3 inches long. The fruit appears to be cylindrical, and about 5 inches long, succulent like a berry. It requires a damp stove, plenty of pot room, and a good rest in the autumn. It strikes easily from cuttings.—*Flore des Serres*, 564.

ACTINIDIA KOLOMIKTA. A shrubby plant of moderate growth, now in the possession of Messrs. Veitch, introduced by Mr. Maries from Yesso. It is a distinct looking plant that will most likely be hardy in this country, and consequently a welcome addition to the shrubby occupants of our gardens. The flowers are of a whitish colour, the foliage prettily variegated.

The branches are glabrous, speckled brown; the membranous leaves measure three to four by one and a half inches, with a petiole of one inch in length, and are ovate-oblong, rounded or sub-cordate at the base, and tapering gradually at the apex into a long acumen; margin thin, sharply and irregularly serrate, the serratures being alternately large and small; venation arcuate, veins remote, surfaces with a few scattered white setæ, especially on the under surface. On the upper surface near the apex is a silvery-white blotch, which disappears on drying, and is not visible in herbarium specimens. Flowers solitary, axillary or cymose, peduncles a quarter to half an inch long, covered with fluffy-white down, three-bracteolate. Flower-buds globose. Flowers half an inch in diameter; sepals five, whitish, imbricate, oblong-obtuse; petals five, white, obovate-oblong, twice the size of the sepals; stamens indefinite, full; filaments thread-like; anthers yellow, sagittate at the base, and with the connective prolonged into a small appendage at the apex; ovaries abortive.—*Gardener's Chronicle*, N.S., vol. xiv., p. 262.

SARRACENIA CRISPATA. A beautiful form of this family of pitcher-plants, introduced from North America by Mr. Bull.

Its hollow, erect, trumpet-shaped leaves grow to two and a half feet high; the upper portion of the pitcher for several inches below the mouth is much swollen out or distended, so as to be disproportionately thicker than it is below. The lid is large, broad, and bent forward, so as to completely, but not closely, cover the mouth of the pitcher; the central rib of the lid at its apex is bent completely over backwards, forming a hook. The upper portion of the pitcher, as well as the lid on the inner side, is beautifully veined with a network of deep reddish-purple, which shows prominently through to the outside. Flowers white, shaded with primrose-yellow.

ANIGOZANTHUS TYRIANTHINUS. *Hooker.* A fine showy herbaceous plant, from Swan River, with densely packed, deep, but dull, purple flowers, pale yellow inside. Belongs to the order of Bloodroots (Hæmodoraceæ).

One of the many fine things discovered by Mr. Drummond during his excursions in the interior to the south-west of the Swan River settlement. He could not fail to be struck with the magnificence of this plant, three or four or more feet high, growing in masses, and bearing paniculated branches, and copious flowers clothed with dense tomentum of the richest Tyrian purple. Its nearest affinity is perhaps with the A. fuliginosa (*Bot. Mag.*, t. 429), but the flowers are very different in shape as well as in colour.—*Botanical Magazine*, t. 4507.

COREOPSIS NUDATA. A slender-growing herbaceous perennial, from the Southern United States. Flowered in the open air at Kew in the autumn of 1878. It is of rush-like habit, and bears handsome large purplish flowers with a yellow disk. Most likely it will require some protection in winter.

A tall, very slender, glabrous perennial marsh or pond plant. Root-stock short, stout, almost tuberous, emitting stout fibres. Stems two to four feet high, very graceful, simple below, sparingly dichotomously branched above, the branches terminating in single heads. Leaves very few, radical, erect, very slender, rush-like, with short bosses that sheath the very base of the stem, quite terete and smooth, purplish-green; cauline leaves few, small, short, subulate. Heads two and a half inches in diameter, with a very small disk, and about eight large purple-rose coloured or crimson rays. Involucre short, one-third of an inch in diameter; outer bracts broadly oblong, obtuse, recurved; inner erect, linear-oblong, toothed towards the summit. Receptacle naked, papillose. Ray-flowers with a small naked achene, a very short, slender tube, and a broad obovate spathulate limb, an inch long and nearly as broad, entire or libulate at the tip, five-nerved. Disk-flowers yellow; corolla-tube long, with short, papillar, recurved teeth; anther-cells shortly ciliate at the base; stigmatic arms spreading, truncate; achenes nearly quadrate, with a narrow ciliate wing and two short hispid arms.—*Botanical Magazine*, 6419.

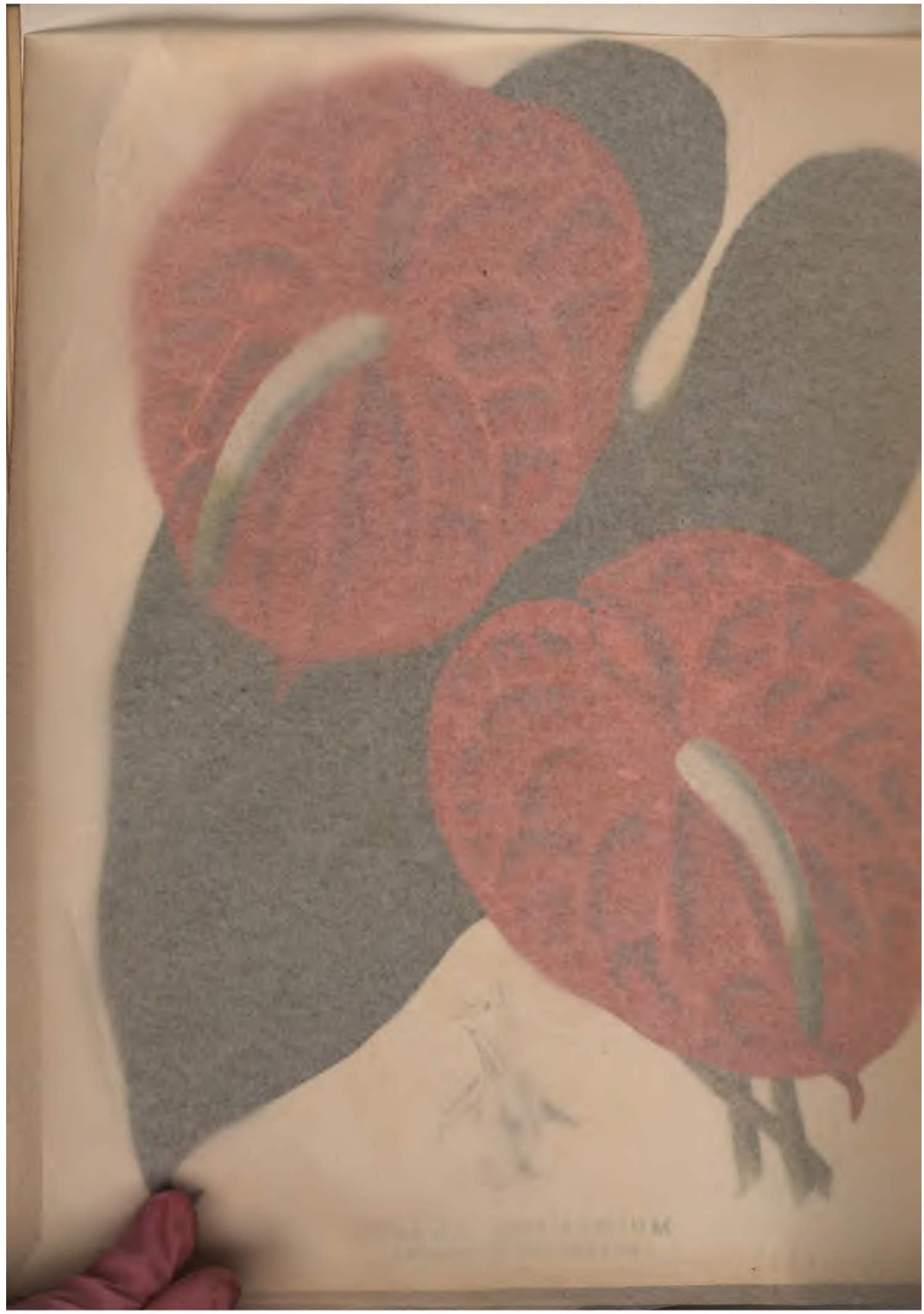
ASPASIA LUNATA. *Lindley.* A stove epiphyte from Brazil, with pale-green speckled fragrant flowers. Blossomed with J. J. Blandy, Esq. (Fig. 71.)



This little-known species naturally bears a curved, somewhat crescent-shaped violet spot in the middle of a whitish lip. The sepals are green, spotted near the base with brown, like a Brassia. In drawings made in Brazil the crescent-shaped spot on the lip is represented as being much more distinct than it proves to be in cultivation.

CUPHEA LANCEOLATA. A Mexican plant, easily grown from seeds or cuttings, and will thrive and flower in the open air in summer, like others of the same family.

An erect, straight, viscidly glandular-pubescent annual, three to four feet high; branches stout, erect, purplish-green. Leaves half an inch to three inches long, opposite and alternate, petioled, ovate or ovate-lanceolate, obtuse, quite entire, membranaceous, soft, bright green. Flowers axillary, solitary, pedicelled, deflexed; pedicels one-third to half an inch long, purple, two-bracteolate; bracteoles alternate, green, small. Calyx an inch long, tubular, gibbous at the very base above, and swollen below the throat, ten-nerved, purple, very viscid; upper lobe triangular-ovate, erect; four others very small, spreading or recurved, broadly triangular, acute, with a tuft of villous hairs in the sinus between each. Four dorsal petals three-quarters of an inch in diameter, orbicular, clawed, fine maroon-purple, with pale veins; four other petals very small, orbicular, paler. Stamens hardly exserted from the throat of the calyx; filaments short, densely woolly above the middle. Anther long. Ovary lanceolate, with a slender straight style attached at its base to the recurved tongue-shaped disk. Capsule included in the sub-erect calyx-lobe, many-seeded.—*Botanical Magazine*, 6412.



[PLATE 19.]

ANDRÉ'S ANTHURIUM.

(ANTHURIUM ANDRÆANUM.)

A Hothouse Plant, from NEW GRANADA, *belonging to the Natural Order of* AROIDEÆ.

Specific Character.

ANTHURIUM ANDRÆANUM.—An Aroid of tufted habit, with oblong, cordate, glabrous, leathery leaves, dark green above, paler beneath, and marked by comparatively few but prominent nerves; the leaf-stalks are ascending, cylindrical, slender, and thickened at the top, the blade being attached, as it were, hinge-wise, so as to allow of varying positions, deflexed or spreading. The flower-stalk is double the length of the leaf-stalk, erect, slender, and bears at the summit a spreading, heart-shaped, acute, leathery spathe, of a brilliant shining scarlet colour, the surface irregularly corrugated, like the cartilage of the ear, and of so firm a texture and brilliant a colour as to suggest the idea of an artificial rather than a natural production. The spadix, which is about three inches long, and of the thickness of a swan-quill, is ivory-white at the base, and greenish-yellow at the tip.

Gardener's Chronicle, N.S., vol. xiii., p. 490.

EXCEPTING from amongst the Orchidaceous family, it is only at considerable intervals that a new species of flowering plant makes its appearance of a character such as enables it to become a general favourite with the gardening community, who, with few exceptions, are generally found to give preference to plants that produce showy flowers, and above all that give a succession of bloom; and if in addition to this the individual flowers are of an enduring character, and the plant moderately easy of cultivation, then it is almost certain that the newcomer will be received with acclamation, and will soon find its way into the hands of most who possess the means to cultivate it. Of this character is the brilliant-flowered Aroid herewith illustrated. We well remember the sensation amongst plant-growers which a kindred species (A. Scherzerianum) made when first bloomed in a way that fairly exhibited what the plant was capable of being grown to; yet, for brilliancy of colour and general effectiveness of the individual flowers, the old favourite pales before this newcomer. In the whole range of cultivated plants we know of none possessing such an indescribable lustre. The spathe is not smooth, as in other Anthuriums, the whole inner surface being composed of a netted corrugation, aptly described by Dr. Masters as resembling "the

cartilage of the human ear," having the colour and appearance of the brightest red sealing-wax newly varnished, to which the milk-white spadix, tipped with greenish-yellow, drooping straight down in front, offers a decided contrast. The spathes evidently keep their red effective colour long after the very small flowers have passed away. The foliage is somewhat broader and larger than that of A. Scherzerianum, and also somewhat paler in colour. From the appearance of many hundreds that have been imported and sold in a living but dormant state, the plant is evidently epiphytal, although we understand it is also found growing on the ground as well as scrambling up tall trees; and we have no doubt but that under cultivation it will conform to ordinary pot treatment, like the other species that have been introduced.

It should be potted in very open material, such as most Orchids will grow in. The fibrous part of good brown peat, with all the earthy matter removed, added to an equal quantity of chopped sphagnum and a sprinkling of broken crocks, with a little sand, will meet its requirements. One thing indispensable to growing A. Scherzerianum—inattention to which causes the bad condition that fine species frequently gets into—is to completely renew the potting material sufficiently often. When this is not done it gets so far decomposed and sodden as to rot the roots, and we feel sure that A. Andræanum will be affected in like manner if permitted to remain similarly too long in the same soil, for, like the rest of the Anthuriums, it will require abundance of water when growing, and must never be allowed to get dry even when at rest. It will also need plenty of drainage in the pots, and we expect, from the country it comes from, it must have a good amount of heat. Of this latter it will no doubt require more than A. Scherzerianum, which succeeds best in an intermediate house, and is often injured by being kept too hot.



[PLATE 20.]

THE CRIMPED GUELDRES ROSE.

(VIBURNUM PLICATUM; *var.* DILATATA.)

A Hardy Shrub, from CHINA, *belonging to the Natural Order of* CAPRIFOILS.

Specific Character.

THE CRIMPED **GUELDRES ROSE.—Leaves rounded at the base, ovate or roundish-ovate, abruptly pointed, finely serrate, closely ribbed and veined so as to appear plaited, smooth on the upper, closely downy on the under side; flowers radiating, all sterile in the cultivated plant, enlarged and collected in a globose cyme.**

Viburnum plicatum, *Thunberg; Siebold and Zuccarini, Fl. Japonica*, I. 81, t. 38; *Botanical Register*, 1847, t. 51.

THIS plant, procured for the Horticultural Society by Mr. Fortune, is described in their journal as "a handsome deciduous bush, bearing some resemblance to the N. American *Viburnum dentatum*." Mr. Fortune says that it is a native of the northern parts of the Chinese Empire, where it was found by him cultivated in the gardens of the rich, by whom it was much admired. When full grown it makes a bush eight or ten feet high. It is a most profuse bloomer, forming numerous heads of snow-ball flowers, like the common Gueldres Rose.

Siebold and Zuccarini speak of it thus:—"This Viburnum is one of the most beautiful plants that are cultivated in Japan. Its name, *Satsuma Temari*, indicates that it inhabits Satsuma, the most southern province of Kiusia (31° N. lat.). It was probably in the beginning imported from China. Now-a-days it is seen in every garden. Its balls of white sterile flowers give it the appearance of the Gueldres Rose; its habit, and broad oval plaited (crimped) leaves, are more like those of the Wayfaring Tree (*Viburnum Lantana*); but it only grows from four to six feet high."

The tendency to form distended sterile flowers, to which this owes its beauty, is one which has attracted little attention. That it does not indicate natural affinity is plain from a comparison of the very different orders in which the tendency is manifested, as in Umbellifers, Hydrangeads, and Crucifers, where it occurs in the corolla. Nor is it wholly the result of domestication; for we believe that no instance is known in which the peculiarity has been observed, unless the plant is partially thus deformed when wild. For instance, among Viburnums, the only certainly known snow-ball sorts are *V. Opulus, Oxycoccus, molle, plicatum, macrocephalum,* — all of which have sterile radiant flowers when wild. Indeed the present plant, with only a part of its flowers in this state, would, we suspect, be handsomer than the perfect monster we possess: at least the appearance of the wild specimens justifies the conjecture. This wild state was observed by Fortune, in May, 1844, both at Teintung and Ningpo, where specimens were collected.

GLEANINGS AND ORIGINAL MEMORANDA.

CINCHONA CALISAYA. The tree that yields the famous Calisaya bark, and which has the reputation of being the most important kind for medicinal purposes. It has, we understand, flowered for the first time in this country in the conservatory of J. E. Howard, Esq., of Tottenham, where it has grown to some eight or ten feet in height. Its unrivalled reputation for medicinal purposes gives much interest to it. Found in Bolivia and Peru.

A lofty tree, with an erect, ascending stem, often twice as thick as the human body, and a leafy crown, overtopping all the trees of its native forests; bark thick, longitudinally and transversely fissured; branches spreading. Leaves opposite, oblong-elliptic, or obovate-lanceolate, often large and broad, glabrous and shining above, beneath with pale veins, in the axils of which are rough depressions; petiole short. Stipules oblong, obtuse, quite entire, connected. Panicle large, diffuse, tomentose. Peduncles square and compressed; main ones opposite, spreading; secondary and ultimate ones opposite, or alternate. Bracts ovate, acute. Flowers very numerous. Calyx minute, five-toothed. Corolla rose-red, tube half an inch long, tomentose, as are the spreading lobes. Capsule ovoid, acute, brown; seeds yellow; wing elliptical-lanceolate, subacute at both ends.—*Botanical Magazine*, 6434.

CŒLOGYNE BARBATA. This fine Orchid has been flowered in both Sir Trevor Lawrence's and Mr. Day's collections, who, we believe, furnished flowers to Professor Reichenbach for the description given below. It is a handsome addition to the already fine genus Cœlogyne, and will most likely be found to thrive best under an intermediate temperature, with plenty of water during the growing season, similar to C. cristata, and like that well-known beautiful species, not to be kept so dry as the generality of Orchids, even when at rest. We believe the plant was introduced by Mr. Bull, through his collector Mr. Freeman.

Panicle over two feet long, rigid, bearing eight stiff imbricate brown scales under the inflorescence. Labellum trifid, with projecting triangular acute middle lacinia, three rows of narrow lamellæ on the disk. Upper part of column hooded, with toothed membrane round the anther. The stigmatic hollow is transverse under broad projecting rostellum. Flowers white, with lamellæ and ciliæ brownish-black.—*Gardener's Chronicle*, N.S., vol. xiii., p. 8.

LUVUNGA SCANDENS. *Hamilton* (*alias* Limonia scandens, *Roxburgh*). A stove plant, from the continent of India, with white fragrant flowers. Belongs to Citronworts (Aurantiaceæ). Blossoms in spring in the Royal Botanical Garden, Kew. (Fig. 72.)

A delicately fragrant plant from Silhet and Chittagong. Dr. Hamilton called it *Luvunga* (from its Sanscrit name,

"*Luvungaluta*"). In cultivation, though attaining a height of nearly twenty feet, it hardly deserves to be called scandent. Leaves alternate, remote, each with three leaflets. Stalks two to three inches long. Leaflets five to six inches long, lanceolate, acuminate, entire, feather-veined, with clear transparent dots. Flowers axillary, in a dense short raceme, much resembling those of the orange, and not less fragrant. The kind of soil is not important; any light loam suits it, so that it be not retentive of water.—*Botanical Magazine*, t. 4522.

ARNEBIA ECHIOIDES. *Alphonse De Candolle* (*alias* Lycopsis echioides, *Linn.*; *alias* Anchusa echioides, *Bieberstein*; *alias* Lithospermum erectum, *Fischer*). A hardy herbaceous plant, with showy yellow flowers, belonging to Borageworts. Native of Armenia and the Caucasus. Flowers in June. (Fig. 73.)

Sir W. Hooker follows M. Alphonse De Candolle, who in a volume of the Prodromus has referred this plant to *Arnebia*, although it does not accord in character. The species is a native of the Caucasian Alps, and of Armenia: is quite hardy, flowering in the open border, or in a pot, in June and July, where it makes a very pretty appearance



72

73

with its scorpioid spikes of large yellow flowers, with five deep purple, well-defined spots at the throat. These spots, however, in the cultivated plant, are sometimes obsolete—plants were raised in the Kew Gardens from seeds sent by Dr. Fischer, of St. Petersburg Root fusiform, woody, throwing up two or more erect, leafy, herbaceous stems, about a span or more high, downy, with short hair. Leaves spreading, somewhat hoary, soft, all sessile ; those from the roots, large, obovate, oblong ; from the stem, obovate-lanceolate, all rather obtuse and becoming smaller upwards. The stems terminate in a branched, scorpioid, leafy spike of large yellow flowers. Calyx, cylindrical, hairy, cut almost to the base into five, erect, linear, obtuse segments. Corolla between funnel and salver-shaped; the mouth spreading; the tube nearly twice as long as the calyx, hairy within ; the limb cut into five nearly equal, rounded lobes, having a dark orbicular purple spot at the re-entering angle of each pair of lobes. Style shorter than the tube. —*Bot. Mag.*, t. 4409.

Notwithstanding the number of aliases under which this plant is already known, it is still unsatisfactorily named. It cannot with any propriety be placed in the same genus with *Arnebia cornuta*, whose style divides into 4 arms at the point, and which has 5 converging scales on the tube of the corolla near the base. It would rather seem to be an *Alkanna*, near *A. Græca*. At least it is identical in genus with *Alk. hirsutissima* from the Euphrates. We forbear, however, from disturbing the name, not possessing materials or leisure for investigating the different oriental species assembled by M. Alphonse De Candolle under the names of *Arnebia* and *Alkanna*. It was found in Persia by Major Willock, and we have recently remarked it among dried plants from the neighbourhood of Trebizond. The specimens from the former gentleman are nearly 18 inches high and loaded with flowers. M. Planchon, who has republished this plant in the "Flore des Serres," doubts its being an Arnebia, but throws no light upon its true genus.

ECHINOPSIS CRISTATA. *Salm Dyck.* (*alias* Echinocactus obrepandus *Salm Dyck.*) A beautiful white, or purple-flowered plant, belonging to the order of Indian Figs (Cactaceæ). Native of Bolivia.



No less remarkable for the large size of its flowers than for the deeply-lobed ribs of the stem ; purchased of Mr. Bridges on his return from Bolivia, where he had gathered them and other fine species of *Cactaceæ* then first known in our gardens, in 1844. In 1846, the individual which blossomed, produced purple flowers ; that which bloomed the following year (1847) bore white ones. This showy *Echinopsis* is a native of Chili, and, like its Mexican allies, thrives if potted in light loam with a little leaf-mould and a few nodules of lime-rubbish. The latter are for the purpose of keeping the soil open ; it is also necessary that the pot should be well drained. In winter, water must be given very sparingly and the atmosphere of the house should be dry : the temperature need not exceed 50° during the night, and in very cold weather it may be allowed to fall 10° lower, provided a higher temperature be maintained during the day. As the season advances, the plants should receive the full influence of the increasing warmth of the sun ; and during hot weather they will be benefited by frequent syringing over head, which should be done in the evening : it is, however, necessary to guard against the soil becoming saturated, for the soft fibrous roots suffer if they continue in a wet state for any length of time.—*Botanical Magazine*, t. 4521.

HEDYCHIUM CHRYSOLEUCUM. *Hooker.* A showy stove herbaceous Gingerwort (Zingiberacea), with large white and yellow flowers. Native of India. Blossomed at Kew in the autumn of 1849. (Fig. 74.)

Very handsome, and deliciously scented ; flowers pure white, bright orange in the disk ; anther and filament deep orange. It is nearly allied to *Hedychium flavescens* (*H. flavum*, *Bot. Mag.* t. 2378) and *H. spicatum*. From the former it is at once distinguished by its glabrous leaves, from both by the larger flowers and the much larger and broader lateral segments, and by the pure white of the inner segments of the perianth with the rich orange colour of the disk or centre.—*Botanical Magazine*, t. 4516.

74

SIPHOCAMPYLUS ORBIGNYANUS. *Alph. De Candolle.* A Bolivian (?) greenhouse plant, with broad dark-green leaves, and crimson and green flowers. Belongs to Lobeliads. Introduced by M. Van Houtte. (Fig. 75.)



75

Branches and leaves covered with fine down. Leaves in threes, with rich red teeth. Flowers solitary in the axils, long-stalked, about two inches long, with a deep crimson tube, and a green-edged limb.—*Flore des Serres*, 544.

IXORA SALICIFOLIA. *De Candolle.* (*alias* Pavetta salicifolia *Blume.*) A stove shrub, of great beauty, from Java. Flowers flame-coloured. Belongs to the Cinchonads. Introduced by Messrs. Veitch and Co.

Some splendid specimens in a living state were exhibited at the floral exhibitions of Chiswick. Nothing can be more beautiful than the large flame-coloured flowers, or more graceful than the copious willow-shaped leaves, often more than a span in length. It is a native of the mountains of Java; first noticed there and characterised by Blume. Two varieties are in cultivation with Messrs. Veitch: the one with the smallest flowers has them the most deeply coloured. "Another *Ixora* is reported to be on sale in this country, quite different from this, under the name of *I. salicifolia* which may be the true plant of Blume!!" An erect shrub, 2-3 feet high, with rather closely-placed opposite leaves, borne on extremely short stalks, almost sessile, narrow-lanceolate, very much acuminated, often a span long, entire, smooth, dark shining green above, paler beneath. Corymb large,—when the flowers are fully expanded, forming a hemispherical head of deeply-coloured, orange-coloured flowers, or almost crimson. Style scarcely exserted. Stigma three-lobed. This showy *Ixora*, an abundant flowerer even when only six inches high, requires a warm and moist stove, and a soil composed of about half loam and half peat, with a portion of sharp sand. In order to form a handsome plant, a young healthy one should be selected, and freely encouraged into quick growth by placing it in bottom-heat. As it increases in size it must be shifted into larger pots, which should be well-drained, so that water and syringing may be freely administered during the summer-season without the risk of the soil becoming saturated.—*Botanical Magazine*, t. 4523.

ONCIDIUM LEUCOCHILUM. *Bateman.* This has been figured in the "Flore des Serres," t. 522, under the *alias* of Cyrtochilum leucochilum, *Planchon.*

AMARYLLIS LATERITIA. *Dietrich.* A stove Amaryllid from Guinea, with red flowers. Introduced by Mr. Decker of Berlin.

It is uncertain to which of Herbert's genera this plant belongs; it seems intermediate between Vallota and Amaryllis.

The leaves appear later than the flowers, and are between lanceolate and strap-shaped. The scape is two feet high, taper, glaucous, and two-flowered. The segments of the flower are spreading, but combined into a curved funnel-shaped tube, whose throat is destitute of appendages. The outer divisions of the flower are broadest. The stigma is very small and three-cornered. The flower-stalks are a full inch long; the flowers themselves about three inches.—*Allg. gartenzeit.* 1850. No. 9.

CYPRIPEDIUM VEXILLARIUM. A handsome hybrid Orchid of Messrs. Veitch's, raised between C. barbatum and C. Fairrieanum, partaking most in appearance of the former parent, but not so large.

Leaves smaller, and in their ground-colour paler than C. barbatum, irregularly veined with darker green. Flower not so large as C. barbatum. Upper sepal large and somewhat pointed, ground-colour white, suffused with reddish-purple, veined with deep purple from the base to the top; lower sepal small. Petals olive-green, with several purple longitudinal lines through them, heavily barbed on the edges, and wavy. Lip yellowish-olive, with purple net-like reticulation over its whole outer surface.

GAULTHERIA LINDENIANA. *Planchon.* An evergreen greenhouse shrub, belonging to the order of Heathworts. Flowers small, pure white. Native of the mountains of Caraccas. Introduced by Mr. Linden. (Fig. 76.)



Found on the Silla de Caraccas, at an elevation of between 6,000 and 7,000 feet. Leaves said to resemble those of the Camellia in form, and of the Arbutus in texture. Flowers, although small, very conspicuous because of the pure whiteness of their calyx and corolla. —*Flore des Serres*, 501 d.

ADIANTUM BELLUM. The favour that has been bestowed by cultivators upon the arborescent and larger growing kinds of Ferns has resulted in many of the most beautiful and elegant being left to comparative neglect. Of such is this little Adiantum, which is a native of the island of Bermuda, and has been introduced by Mr. Bull.

Fronds tufted, three to six inches high, bipinnate, ovato-lanceolate; pinnæ of three to six pinnules, half to one and a half inches long; stalked; pinnules cuneate or irregularly transverse-oblong, the somewhat larger terminal ones cuneate, and divided into two or three shallow lobes, the margin erose, all shortly pedicellate, the pedicels hair-like, not articulated with the pinnule, but showing at their apex a short y-shaped ebeneous furcation, which passes into the flabellate venation; sori various, two or three on the smaller pinnules, short and roundish, longer and sublunate, situate at the apex of the shallow lobes; indusium entire; caudex thin, shortly creeping, with criniform scales; stipes and rachides ebeneous, smooth.—*Gardener's Chronicle*, N.S., vol. xi., p. 172.

SELAGINELLA VICTORIÆ. The quaint beauty of the club-mosses has always been recognised by those who take an interest in plants, especially such as are remarkable for their elegance of formation. In appearance, S. Victoriæ is the nearest to S. Wallichii of any with which we are acquainted, but it is even handsomer than that fine

species. The fronds are large and spreading, more like those of some of the most elegant Ferns. The plant is one of Mr. Bull's introductions from the South Sea Islands, and consequent upon the heat it receives in its native country, it will require a warm house to grow in, with a considerable amount of moisture in the atmosphere; in other respects it will no doubt succeed with similar treatment to the other heat-requiring species, such, for instance, as S. lævigata.

Stem scandent, two to three feet or more, continued by new terminal growths, regularly branched, becoming bare below; branches flat, ovate, very regularly pinnate, not decrescent to the apex, but terminating in a branchlet similar to the rest; branchlets three-sixteenths of an inch wide, simple, those of the fertile branches about one inch long, set about one-eighth of an inch apart, the basal ones often forked; leaves oblong-falcate, entire, the anterior base cut away, the posterior produced; mid-rib distinct; intermediate leaves much smaller, semi-ovate acuminate parallel; spikes slender, tetragonal, terminating the branchlets, one to two inches long.—*Florist and Pomologist*, 1878, p. 90.

DIANTHUS CRUENTUS. *Fischer.* A hardy herbaceous plant, with deep rose-coloured flowers. Introduced by Dr. Fischer. Flowered with Mr. Van Houtte. (Fig. 77.)



77

This charming Pink has been received by Mr. Van Houtte from the Botanic Garden, St. Petersburg, under the name of D. cruentus. It is supposed to come from the Caucasus, or from Siberia (rather distant stations it must be confessed). Perhaps less brilliant than some varieties of Sweet William (*D. barbatus*), but quite as ornamental. The leaves form tufts of light green, from which rise simple stems terminated by a nearly globular flower-head, which produces from the midst of a curious mixture of scarious, rusty, long-pointed bracts, numerous blossoms with a violet calyx, and wedge-shaped petals elegantly toothletted, resplendent with vivid carmine, relieved by certain violet hairs which adorn the base of each limb. Allied botanically to *D. carthusianorum* and *barbatus*.—*Flore des Serres*, t. 488.

MASDEVALLIA CHELSONI. This plant is a cross raised, we believe, between M. Veitchiana and M. amabilis, and in appearance partakes of both parents. So far as we know, it is the first Masdevallia raised from seed under cultivation, and adds one more to the many fine Orchids already raised at the Chelsea establishment.

Petals white, with a mauve spot at the top. Lip pandurate, mauve at the border, brown at the apex, white on the disk of the inner side. Column white, and a short mauve streak on each side of the middle border.—*Gardener's Chronicle*, N.S., vol. xiii., p. 554.

PRIMULA ROSEA. A lovely hardy Alpine plant from Kashmir, one of the finest of all Primroses. From what we saw of it in Earl Ducie's garden at Tortworth Court, Gloucestershire, where a large bed was filled with dense masses twelve inches across, we feel sure its habit and the splendid colour of its flowers will make it a universal favourite.

Glabrous, not mealy. Leaves densely tufted, obovate-lanceolate, acute, sessile, one to two inches long, crenulate, deep green above, paler beneath, margins revolute when young. Scapes many, stout, longer than the leaves,



four to ten flowered. Involucral bracts erect, appressed, thick, lanceolate, acuminate, produced downwards into an oblong-obtuse auricle. Pedicels equalling or exceeding the bracts. Calyx one-third of an inch long, tube cylindric, cleft to the middle into five subulate erect lobes. Corolla tube exceeding the calyx; limb flat, one-half to two-thirds of an inch in diameter, clear bright rose-carmine; segments cuneate-obcordate, lobes rounded, with a deep acute sinus; throat a little swollen, smooth.—*Botanical Magazine*, 6437.

ECHEANDIA TERNIFLORA. *Ortega* (*alias* Conanthera Echeandia, *Persoon; alias* Anthericum reflexum, *Cavanilles; alias* Phalangium reflexum, *Poiret*). A half-hardy Mexican Lilywort, with fugitive yellow flowers. Blossoms in August. (Fig. 78.)

It seems worth while to reproduce this plant, which, although long known in gardens, is rare. The filaments are club-shaped bodies covered near the upper end with rings of blunt projections hooked back, which may be regarded as an incomplete state of the hairs on such plants as Bulbine, no doubt nearly related to Echeandia. Examined with the microscope, these projections are found to be caused by the free ends of long loose club-shaped cells hooked back and placed in a whorled manner around a central cord of spiral vessels. They are filled with a yellow grumous fluid.

LILIUM WALLICHIANUM. *Schultes.* A very fine hardy bulbous plant, with white flowers, from the N. of India. Introduced by Major Madden. Blossoms in August. (Fig. 79.)

Asia has furnished us with four distinct kinds of tube-flowered white lilies; namely, *candidum*, the common white *Japonicum*, *longiflorum* with its dwarf 1-flowered variety, and *Wallichianum*. The first has a short tube and flowers in racemes. The others have them varying in number from one to three, with a very long tube. Of these *Japonicum* has broad leaves, and leathery flowers stained outside with olive brown; the two others have the flowers perfectly white, with a much thinner texture. Between themselves *L. longiflorum* and *Wallichianum* differ in the latter having very long narrow leaves, of which the uppermost are extended into a linear point, and flowers as much as eight inches long; while *longiflorum* has leaves twice as broad, and flowers generally much smaller. These are, we believe, the only real distinctions between the two, and seem hardly sufficient to justify the creation of two species; the distinctions are, however, permanent, and affect considerably the general appearance of the plants.

"This is a very distinct and noble species, with a tall and slender stem, two-thirds of which are thickly furnished with long and linear leaves. The flowers are white, fragrant, extremely large, with a very long and narrow tube, which is gradually widening into an ample spreading limb; there are generally two or three at the apex of the stem; sometimes only one. In size they exceed those of Lilium giganteum. The claws of the three exterior sepals are closely united to those within, in consequence of their sharp margins being confined within the deep furrow, which is formed on each side of the dorsal rib of the latter. The base of the stem I have repeatedly found horizontal, creeping and scaly like that of a fern, without any remainder of a bulb, but marked with a number of vestiges of old stems. This lily is also found towards Sirinuggur; I have received plenty of fine specimens collected by Mr. Robert Blinkworth."



79



[PLATE 21.]

KLABOCH'S PESCATOREA.

(PESCATOREA KLABOCHORUM.)

A Stove Epiphyte, belonging to the Order of ORCHILS.

Specific Character.

PESCATOREA KLABOCHORUM.—Quite distinct from P. coronaria in the shape of the callus, and by the minute side auriculæ, and from P. Gairiana by its hairy and styliform processes, as well as by the shorter petals. Sepals and petals white, with deep well-defined chocolate-brown blotches at the extremities. Lip furnished with styliform asperities. Callus ridged, with brown bar-lines of keels. Column yellowish, with brown spots.

H. G. Reichenbach, f. *Gardener's Chronicle*, N.S., vol. xi., p. 684; xii., 167.

PESCATOREAS and Bolleas, as we said recently in describing B. cœlestis, are very nearly allied. Not alone is this so in the formation of the organs of the flowers, but relatively so in the appearance of the flowers and the form of growth which the plants possess. Like the Bolleas, the flowers of Pescatoreas are produced singly on stout erect peduncles, which rise from the base of the leaves, but do not attain a length equal to that of the leaves. There is another similarity between the Bolleas and these Pescatoreas: they are both very variable in the colours or shades of colour in their flowers. The variety which is represented in the accompanying plate was bloomed in the collection of W. Cobb, Esq., Silverdale Lodge, Sydenham, to whose kindness we are indebted for an opportunity of figuring it. It is far in advance in the clear ground-colour of the sepals and petals, as also in their beautifully-distinct markings; in fact, it is one of the most handsome Orchids we have met with for some time, and this, be it observed, is saying a good deal when every part of the world where Orchids are likely to reward the collector is being ransacked to an extent that has never before been equalled. There is one thing arising from this which is a decided advantage, looking at the matter from a cultural point of view. The quantity of new species that have of late years been introduced has had the effect of causing those who form collections of these plants to be more particular in their selection. Time was when a new Orchid, however little intrinsic beauty it possessed, was eagerly bought up at a price very much above that which its merits as a flower deserved.

These Pescatoreas have not the best reputation for being easily managed; on the

contrary, some growers predict that they will never be so extensively grown, on account of their liability to get out of health. Some who have them recommend that they be given plenty of heat, with much moisture in the atmosphere, and also that they be kept much shaded. Where this course is followed, it is more than likely that the predictions about their getting into bad health will be realised. Under such treatment they will probably make luxuriant growth, and possibly flower proportionately for a time, but their continuing in such condition is little to be expected, the plants virtually exhausting themselves. A considerable amount of heat they no doubt require whilst growing, and they ought never to be kept, even when at rest, so cool as many species; but if they are kept too dark by being stood away from the glass, with too little air in a close smothering atmosphere, their healthy existence will be of short duration. Their thin leaves are not likely to bear much direct sunlight, but enough shade to protect them from its effects when its rays would otherwise come upon them is a very different thing to the darkened places to which they are sometimes subjected.



THE KAMTCHATKA RHODOTHAM.
(RHODOTHAMNUS KAMTCHATICUS.)

[PLATE 22.]

THE KAMTCHATKA RHODOTHAM.

(RHODOTHAMNUS KAMTCHATICUS.)

A Hardy Evergreen Dwarf Shrub, Native of EASTERN SIBERIA, *belonging to the Order of* HEATHWORTS.

Specific Character.

THE KAMTCHATKA **RHODOTHAM.—Leaves oblong and obovate, fringed with coarse hairs, thin, blunt, tipped with a conspicuous gland. Sepals obovate, blunt. Corolla purple, with rounded lobes.**

Rhododendron Kamtchaticum: *Pallas, Fl. Ross.*, I., p. 48, t. 33.

FOR this exquisitely beautiful shrub we are indebted to Mr. Loddiges, whose predecessors raised it from seed about forty-five years ago. It appears to be of slow growth, forming a compact bush, and is admirably adapted for rock-work in a shady situation.

According to Pallas, this charming plant grows abundantly near the sea of Ochotsk, in the peninsula of Kamtchatka, and in Behring Island in muddy mountainous places. There it begins to blossom from the end of July, grows vigorously to the end of August, and ripens its seeds about the end of September. The root, he says, is woody, dry, as thick as a quill, and forms creeping runners. From this arise a great many leafy stems, which every here and there break into flower. The leaves are close together, alternate, sessile, somewhat ovate, tapering downwards, somewhat five-nerved, rather sharp-pointed, perfectly entire, and fringed with very perceptible hairs. The peduncles are two or three inches long, closely surrounded by small leaves, besides which there are generally about two ovate sessile leaves; they are two-flowered, or occasionally one to three-flowered, and very hairy. The flowers are nodding, and deep purple. The sepals leafy, three-nerved, two being nearer to each other than to the others. The corolla is irregular, rotate, with a very short funnel-shaped tube, and a deeply

5-lobed limb; the segments lanceolate, downy at the throat, unequal, the three uppermost rather the smallest, and less deeply divided, spotted with crimson at the base, standing up like a hood, the two lower very much spreading and spotless. The stamens, which arise from the bottom of the flower, are ten, curved downwards, the upper shortest, the lower twice as long as the others, not so long as the corolla, with ovate, double, deep-purple anthers. *Fl. Rossica,* vol. i., p. 40.

To the locality given by Gmelin and Pallas, Ledebour adds the following: Mount Marckan, according to Turczaninoff; the country of the Tschuktskes in the Bay of St. Lawrence; Kamtchatka and Unalashka. Sir W. Hooker gives Banks's Island and Port Edgcombe, on the north-west coast of N. America. It is, therefore, clear that it belongs to climates far more rigorous than our own, and with much worse summers. And this is the key to its cultivation. Like the *R. Chamæcistus*, it is unable to endure the drier air and brighter summer sky of England; but shrinks from our heats, and withers beneath such evaporation as leaves undergo in this climate. Hence the wisdom of the treatment which consists in keeping such plants in a cold pit closed up all day, and uncovered all night. Mr. Loddiges's cultivators made nothing of it till they put it under a north wall where Liverworts and such soft flabby plants delight to dwell.

We do not believe that any botanist would have thought of calling this a Rhododendron, had not Linnæus set the example by including the *Chamæcistus* in that genus. Its great leafy calyx, flat corolla divided almost to the base, and nearly equally spreading although very unequal stamens, are quite at variance with Rhododendron. Neither has it the scurfs or stellate hairs observable, we believe, in all the genuine species in which hairs are ever found. On the contrary, the hairs are always simple, in which respect it agrees with the Chinese Azaleas, to which it is more nearly related than to Rhododendrons, but from which its corolla, almost divided into separate petals, sufficiently divides it. To this may be added, the singular gland at the end of the leaves, a nearer approach to which is to be found in the scaly Azalea (*A. squamata*) than in any Rhododendron we have examined.

In the accompanying figure, 1, represents an anther previous to its bursting by two pores at the end; and 2, the underside of a leaf with the terminal gland.

GLEANINGS AND ORIGINAL MEMORANDA.

NEPENTHES OUTRAMIANA. A handsome addition to these singular and interesting plants now so much cultivated. It is a seedling variety, raised at the Holloway Nursery, and is a cross between the deeply-mottled N. Hookerii and N. Sedenii, a small highly-coloured kind of garden origin. It has received a first class-certificate from the Royal Horticultural Society.

The ground-colour is a medium shade of green, densely mottled, with deep red, the latter colour is so prominent as to give the pitchers a more than usually bright appearance. The ciliate wings are large and conspicuous.

NEPENTHES ROBUSTA. A seedling raised by Mr. B. S. Williams, the parents being N. Hookerii and the small Chinese species N. phyllamphora.

It is a distinct-looking variety, with flask-shaped pitchers, the lower part much more inflated than with many of the species or varieties. The wings are large and deeply toothed. The colour is similar to that of N. Hookerii, which in itself is one of the handsomest marked kinds in cultivation.

ERYTHRINA ERYTHROSTACHYA. *Morren.* A stove shrub of unknown origin, belonging to the leguminous order. Flowers scarlet, very handsome. Introduced by the Belgians.

The genus *Erythrina* of Linnæus is composed of shrubs or shrub-like plants, occasionally having a subterraneous stem with annual sub-herbaceous branches. They are indigenous to the tropical and sub-tropical regions of the whole globe. Their stem and leaves are often furnished with prickles; their leaflets are trifoliate and pinnated, the terminal leaflet being at some distance from the other two; instead of stipules there are stalked glands, small stipules distinct from the petioles. The spikes of the flowers are long. The pedicels are often in threes. The flowers are generally red and scarlet, and most beautiful. The seeds are often black, or variegated with black, and brilliant. This splendid species is not like any hitherto described and enumerated in the repertorium of M. Walpers. It approaches *Erythrina reticulata*, Presl., but the leaves are glabrous, not wrinkled or downy. Besides, the thick tuberculiform tooth of the calyx separates it from all the other species of the genus. The spike is more than six inches long. The flowers, arranged in threes, are very numerous, and an inch and a half or two inches in length. Their colour is very brilliant, and it is no doubt one of the prettiest plants that can be cultivated. It was found in the collection of M. Verleuwen of Ghent, from whom it was bought by M. Cachet of Angers, under the erroneous name of *Erythrina speciosa*. This was in 1832. We have given it one which recalls the beauty of its spike The cultivation does not differ from what is required for the *Erythrina Corallodendron*. The trunk, when well cut in, is placed in a large pot in a temperate house, where it begins to grow after February, if, that is to say, it is not wished to force it. In fine weather it may be planted out, and in summer it forms a great ornament in our gardens.—*Annales de Gand*, t. 291.

CONOCLINIUM IANTHINUM. *Morren.* A stove herbaceous plant from Brazil, belonging to the Composites. Flowers in broad violet flat-headed panicles. Introduced by M. Alex. Verschaffelt.

This is a plant of great beauty. It forms a low soft-wooded shrub, covered with short brown down. The leaves

are heart-shaped, acute, stalked, serrated, strongly marked with pale veins. The flat heads of violet flowers are full six inches across, and appear to consist of numerous entangled many-pointed stars. They have a mild honey-like fragrance, with a peculiar aroma.—*Annales de Gand*, t. 253.

HYPOCYRTA GRACILIS. *Martius.* A pretty creeping stove Gesnerad with cream-coloured flowers, from Brazil. Introduced by Messrs. Backhouse of York. (Fig. 80.)


80

Plant minutely pubescent, creeping, sometimes bearing ascending shoots. Stem purplish-brown, rooting from below the insertion of the leaves. Leaves on short petioles, opposite, thick, fleshy, ovate, subacute, dark green and slightly concave above, pale and often blotched with red and convex beneath. Flowers on short red peduncles, solitary or in pairs, single-flowered. Calyx of five, deep, linear-lanceolate segments, red at the base. Corolla moderately large, cream-white, spotted with orange on the underside of the tube within, between bell-shaped and funnel-shaped: tube decurved, and again curved upward at the mouth; limb of five, nearly equal, rounded segments. Ovary ovate, with a large gland at the base of the back.

A soft-wooded suffruticose plant, of a trailing scandent habit, emitting roots from below the axils of the leaves, and growing as an epiphyte on trees in the moist forests of Tropical America. It should be kept in such an atmosphere as that appropriate for the cultivation of tropical Orchids, and if there is sufficient accommodation, it may be allowed to grow in a natural manner over any elevated surface, covered with turfy sods, kept moist; or may be planted in a pot or basket filled with loose turfy soil and suspended from the root.—*Bot. Mag.*, t. 4531.

This is not a Hypocyrta, as Decaisne limits the genus, but would rather belong to what he understands by Alloplectus.

CYCNOCHES PESCATOREI (*alias* Acineta glauca, *Linden.*) A stove Orchid from New Granada. Flowers yellow and brown. Introduced by M. Linden in 1848. Blossomed with M. Pescatore.

C. Pescatorei, foliis coriaceis subtùs glaucis, racemo multifloro pendulo, ovario tomentoso, sepalis oblongis acutis, petalis minoribus lanceolatis basi angustatis, labello plano trilobo medio tomentoso lobo intermedio carnosiore acuto.

M. Luddeman, who had seen the plant in the possession of M. Pescatore, has described it thus:—"A much stronger plant than Acineta Humboldti, with a pseudo-bulb of 0·16 of a yard long and 0·09 of a yard broad. The leaves are leathery, lanceolate, glaucous beneath, 0·60 to 0·80 of a yard long on the young pseudo-bulbs, which are not more than half the size of the imported ones. The flower-stem hangs down perpendicularly, a yard long, with ninety-six flowers. These last about a fortnight, but for several months the long string of buds excited the curiosity of visitors. The sepals are dull yellow, a little brown inside. The petals and lip are bright yellow." Specimens forwarded from M. Pescatore's rich collection measured one and three-quarter inches in diameter. The species seems to be closely allied to the bearded Cycnoches (*C. barbatum*).

CATASETUM FIMBRIATUM (*alias* Myanthus fimbriatus, *Morren in Ann. de Gand*, t. 231). A terrestrial Orchid of unknown origin, with dirty white and pink flowers. Introduced by the Belgians. (Fig. 81.)


81

C. fimbriatum; racemo cernuo multifloro, sepalis petalisque linearibus acuminatis lateralibus longioribus, labello plano cordato membranaceo dentato vel fimbriato basi saccato conico, dente prominente in discum.

All that is known to us regarding this plant is what we find in Professor Morren's account, published in the work above quoted. It appears to be a species of no great beauty, with the habit of *C. cernuum*, but with pink sepals and petals speckled with red, and a broad heart-shaped dirty white lip strongly cut at the edge. It is said to have obtained an extra gold medal at the National Horticultural and Agricultural Exhibition at Brussels in 1848, when we are told "Pendant trois jours plus de cent mille yeux se fixèrent sur cette étrange et admirable gynandre dont le parfum embaumait la salle." In this country people would have hardly remarked it. Two varieties are mentioned; one green and white, the other rose and yellow. It is not improbable that they are identical, their supposed differences being due merely to the mode of cultivation.

MEDINILLA SIEBOLDIANA. *Planchon* (*alias* M. eximia, *Siebold.*) A handsome stove-plant from Java, belonging to the order of Melastomads. Introduced by M. Van Houtte. Flowers white and rose-colour.

The habit of this plant, and the manner in which it is to be cultivated are the same as those of our *Medinilla magnifica* (Plate 18 of the present volume). The branches are perfectly taper, or very slightly four-cornered when quite young. The leaves are deep green, triple-nerved, brownish underneath, oblong, tapering into a short footstalk. The flowers are white, of the texture of wax, in short naked divaricating panicles, with a yellowish brown calyx and deep rose-coloured stamens. It appears to be a handsome species even although it wants the brilliant bracts of the Magnificent Medinill. *M. eximia* of Blume is a different species. *Flore des Serres*, t. 482.

SELAGINELLA BELLULA. Another handsome club-moss, distinct in appearance, and well deserving of cultivation. It belongs to the erect-growing section of these plants, and comes from Ceylon, from whence it has been introduced by Mr. Bull. To have it in good condition, it will require warm treatment, with plenty of moisture to the roots, and a moderate amount of shade to ward off the direct rays of the sun.

Stem continuous, erect, twelve inches high, of a reddish hue, roundish, with two shallow furrows, branched to the base; branches alternate, the lower ones more distant, smaller, and less divided, the upper ones rather crowded, spreading, ovate in outline, with a stalk-like portion at the base, closely bipinnate, the secondary branches mostly forked near the end; leaves entire and glossy beneath, those of the main stem distant, of the branches more approximate, oblong, subfalcate, acute, broader on the anterior side of the prominent nerve, but more produced at the base and rounded on the posterior side, erectly spreading and deflected from the plane, the smaller leaves ovate, shortly acuminate, obliquely affixed, subparallel; leaves of the branchlets close set, oblong, with a straight upper and curved lower margin, the nerve falcately curving to the acute point; leaves of the forks obovate mucronate; spikes slender, quadrangular, three-quarters to one inch long.—*Gardener's Chronicle*, N.S., vol. xi., p. 173.

HAKEA CUCULLATA. *R. Brown.* A Swan River Protead with great coriaceous leaves and pink axillary flowers, produced in April. Requires a greenhouse. (Fig. 82.)

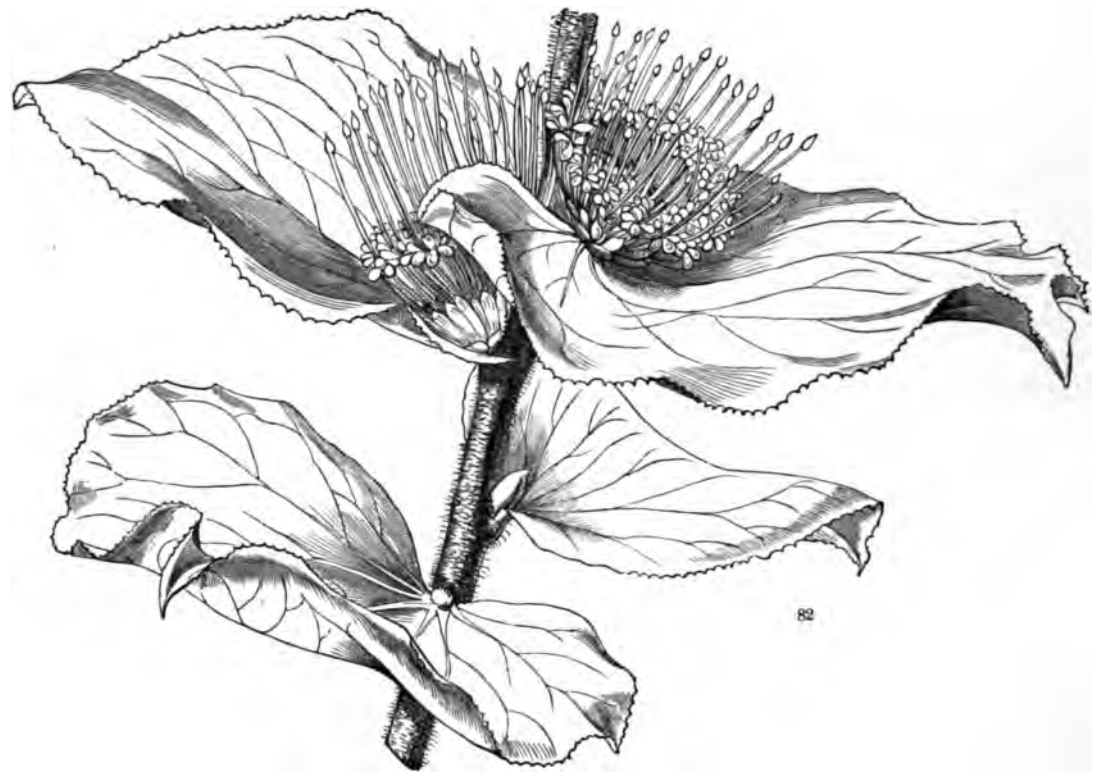
Discovered by the late Mr. Baxter at King George's Sound. Mr. Drummond has also found flowering individuals at

the Swan River Settlement, and has sent seeds, from flowering plants of which our figure was taken at the Royal Gardens, in April, 1850.

An erect shrub, 4 to 5 feet high, the branches pale brown, shaggy. Leaves leathery, cordate, sessile, concave, waved and rather minutely toothed at the edge, glaucous green, distinctly reticulated both above and below. From the axils of the upper leaves the flowers appear in copious clusters: at first surrounded by imbricated deciduous bracts. Sepals red, unequal linear, smooth. Style twice as long as the longest sepals.—*Bot. Mag.*, t. 4528.

Upon the cultivation of this and other Proteads, Mr. Smith has the following useful observations:—

"Before the introduction and high state of cultivation of the splendid flowering plants now annually exhibited in the



vicinity of London, it was customary to estimate the value of public and private collections by the number and rarity of the species, without regard to the circumstance of their producing fine flowers. Perhaps no plants were in higher repute than those of the family to which this belongs, as is amply shown by the early volumes of the Botanical Magazine. Within the last twenty or thirty years, however, the cultivation of *Proteaceæ* has declined; the species have gradually disappeared from most of the private collections around London; and but few nurserymen now take interest in them. This change may be partly owing to the supposed difficulty of preserving them, for under certain circumstances the plants suddenly die, even when in vigorous health. In the Royal Gardens *Proteaceæ* have maintained their place, more especially those that are natives of Australia; and as there are some at this time between forty and fifty years of age, and others of a large size half that age, it may be inferred that *Proteaceæ* are not so short-lived in a state of cultivation as they are generally supposed to be. Within our recollection it was the common practice to grow them in some kind of light soil, usually peat. The hygrometric condition of such soil is easily affected by changes of the surrounding atmosphere; becoming quickly dry during hot weather, and apt to become sodden with moisture in winter, and the spongioles or rootlets of *Proteaceæ* are very sensitive to either extreme; the use of light soil, therefore, in our opinion, accounts for the frequent sudden death of plants of this kind. We use good yellow loam, to which, for small plants, we add a little sharp sand. In shifting or repotting a plant we make it a rule to keep the ball of roots a little elevated above the surface of the new mould, to prevent any superabundance of water from lodging round the base of the stem. In the

winter, care must be taken to give no more water than is required to keep the soil moderately moist; but in summer, water may be given freely in the evening or early in the morning. It is important that the plants should be so placed that the sun's rays do not strike the sides of the pot. The species here figured, being a native of the Swan River Colony, requires to be treated as a greenhouse plant. It does not readily propagate by cuttings, but may be increased by grafting on any of the more common free-growing species. Imported seeds germinate freely."



VERONICA FORMOSA. *Bentham.* (*alias* V. diosmæfolia, *Knowles and Westcott.*) A little half-hardy evergreen bush from Van Diemen's Land. Flowers bright blue. Belongs to the Linariads (*Scrophulariaceæ*). Very pretty. A native of Mount Wellington; and found to stand the winter at Kew, planted against an east wall. (Fig. 83.)

It forms a shrub about 2 feet high, erect, much branched, with two obscure lines of hairs between the leaves. Leaves rather crowded, arranged somewhat in four rows, oblong, lanceolate, spreading, scarcely stalked, single-nerved. Flowers in terminal racemes, not many of which open at one time, though there is a succession of them. Corolla bright and deep purplish blue, somewhat 2-lipped; upper lip of one broad oval lobe, lower of three narrower segments, the middle one the smallest. This with a few others belongs to a section of Veronica characterised as evergreen shrubs, having small closely-set decussate leaves, and forming myrtle-like bushes. The old and well-known Veronica decussata may be viewed as the type of the group. They are natives of high southern latitudes; being found in Van Diemen's Land, New Zealand, Falkland Islands, and Lord Auckland's and Campbell's Islands, in latitude 53°.—*Botanical Magazine*, t. 4512.

HYMENOCALLIS MACROSTEPHANA. A fine bulbous plant nearly allied to Pancratium fragrans, and like it highly fragrant. Amongst those who have flowered it may be named Mr. Woodbridge, of Sion House Gardens, who exhibited a fine example at one of the Royal Horticultural Society's meetings, where its merits were duly recognised. Its pure white fragrant flowers cannot fail to make it a favourite. Its native country is unknown.

Bulb ovoid, two inches in diameter. Leaves eight or nine to a bulb, contemporary with the flowers, two or three feet long, two or three inches broad, narrowed gradually to an inch. Scape much shorter than the leaves, ancepitous, an inch in diameter; umbel six to ten flowered; pedicels very short; outer spathe-valves deltoid, inner lanceolate. Flowers pure white, sweet-scented; ovary oblong-trigonous, half an inch long; perianth-tube three inches long, green at the lower part; segments linear, rotate, a little longer than the tube, half an inch broad. Corona funnel-shaped, two inches in length, and about the same in diameter at the irregularly-toothed throat, where it spreads a little when the flower is fully expanded. Free portion of the filaments abruptly incurved, as in Ismene, about an inch long; anther linear, yellow, under half an inch long. Style protruding an inch and a half or two inches from the corona, declinate, greenish; stigma capitate.—*Botanical Magazine*, 6436.

CROTON WARRENI. A native of the South Sea Islands, introduced by Mr. B. S. Williams. Amongst the many fine kinds of these handsome plants that have made their appearance in late years, this is one of the best, having in addition to other desirable properties the merit of being sufficiently distinct from others already in cultivation.

It possesses a stout, free habit of growth, with arched, drooping leaves, from two to two and a half feet long, and an inch or more broad; ground-colour deep green, blotched and mottled with deep yellow, and pink in the young state, which, in this as in most of the similar coloured kinds, turns deep crimson as the foliage gets older.

ALBUCA NELSONI. This new species was figured in the *Gardener's Chronicle* in the summer of 1880, and was also described by Mr. N. E. Brown. It is a native of Natal, from the district of the Umlazi River, where it was discovered by Mr. Nelson of Bradway, after whom it was named, and who also, we understand, flowered the specimen from which the description is given. It belongs to a class of greenhouse plants not so generally grown as they deserve to be, yet not difficult to manage. In general aspect the Albucas are more like the Ornithogalums than any other plants with which we are acquainted. They succeed with pot culture in ordinary soil, and subject to greenhouse treatment, with a good rest during the dormant season, at which time they should be kept dry.

The entire plant quite glabrous. Bulb large. Leaves bright green, concave at the basal part, nearly flat in the upper part, three to three and a half feet long, one and a quarter to two and a quarter inches broad at about one-third the way up, whence they are gradually narrowed to an acute point. Scape four to five feet high, stout, firm, terete, green, floriferous for nearly half its length. Bracts attenuate from the rather broad base to an acute point, ascending, concave, submembranous, dull reddish on the back; the lower ones are three to three and a half inches long, and half an inch broad at the base, getting gradually smaller as they are nearer the top of the scape. Pedicels stout, ascending, lower ones two to two and a half inches long or longer, upper ones shorter. Flowers one and a half inches long, erect, pure white, with a broad dull brick-red stripe reaching about half way down the back of each segment, fainter on the inner segments; outer segments with a small hood or pocket at apex, inner segments all connivent, with a rather large and shortly bilobed hood at apex. Stamens all fertile, filaments white, anthers with ochre-coloured pollen. Ovary green, with three rounded angles, seated on a short, white, trigonous stipes, which at the angles is produced into short horizontal bifid processes, and between the angles of the ovary is carried up as three thin projecting plates to near the top of the ovary; style clavate-trigonous, minutely papillose, the middle portion green, the base and apex yellowish. Ovules numerous, biseriate in each cell of the ovary.—*Gardener's Chronicle*, N.S., vol. xiv., p. 198.

HIPPEASTRUM (AMARYLLIS) ROBUSTUM. *Dietrich.* A stove Amaryllid from Brazil, with deep red flowers. Introduced by Mr. Decker of Berlin.

Nearly related to *H. aulicum*. Leaves long, two and a half inches wide, strap-shaped, not glaucous, longer than the glaucous scape, which is nearly three feet high. Flowers in pairs, erect, deep carmine-red, a little inclining to carmine, in form between bell-shaped and funnel-shaped, five inches long; the divisions separated quite to the base, flat, those on the outside lanceolate with a callous hooded point, on the inside oblong, acute. The coronet very short and cup-shaped, scarcely a quarter of an inch deep, and quite green.—*Allg. gartenzeit.* 1850. No. 6.

LYCASTE CHRYSOPTERA. *Morren.* A stove epiphyte from Mexico, with deep orange-yellow flowers. Belongs to the Orchids. Introduced by the Belgian Government.

It seems very like *L. cruenta*, but, according to Professor Morren, its flowers are much larger, the colours more brilliant, and the details of the lip essentially different, the appendix being three-lobed, and the middle division of the lip lanceolate, acuminate, and toothletted. The yellow-flowered Lycastes related to *cruenta* approach each other so nearly that, without knowing exactly on what their differences depend, the one may be easily confounded with the other. We trust that the following memorandum will assist in clearing up the difficulty surrounding them. *Lyc. cruenta* is taken for the standard of comparison.

1. *L. cruenta.* Lindley (*alias* L. balsamea, *A. Richard*). Lip roundish, spotted with crimson at the base, the lateral lobes short, the central oblong and rounded; appendix minute, emarginate. Column hairy all over. Petals naked. Guatemala.

2. *L. chrysoptera.* Morren. Lip roundish, spotted, the lateral lobes short, the central lanceolate, acute, toothletted; appendix three-lobed. Column hairy. Petals naked. Mexico.

3. *L. macrobulbon* (*alias* Maxillaria macrobulbon, *Hooker* in *Bot. Mag.*, t. 4228). Lip much longer than broad, spotted with crimson on inside, the lateral lobes short, the central ovate-oblong, rolled back, crisp, broader than the laterals; appendix acute entire. Column (?). Petals naked (?). (Description and figure imperfect.) Native of Santa Martha.

4. *L. cochleata.* Lip nearly circular, not spotted; the lateral lobes long, rather acute; the central flat, circular, emarginate, slightly crisp; appendix entire, as large as the lateral lobes. Column long, hairy. Petals hairy. Native country unknown. Flowers whole-coloured, deep orange; the sepals and petals ovate, the latter obtuse, and not much smaller than the former.

5. *L. crinita.* Lindley. Lip narrowly oblong, slightly speckled; the lateral lobes linear, blunt, nearly as long as the equally narrow hairy oval central one; appendix inconspicuous, terminating a narrow shaggy elevation. Column long, slightly hairy. Petals very hairy. Mexico. Petals yellow, very acute, much smaller than the greenish sepals.

6. *L. aromatica.* Lindley (*alias* Maxillaria aromatica, *Hooker*). Lip oblong, narrowed to the base, spotless, hairy inside; the lateral lobes ovate, slightly curved, obtuse; the central unguiculate, dilated at the end; appendix very large, two-lobed, concave. Column long, narrow, hairy. Petals naked. Mexico (?). Peru.



OCHNA ATRO-PURPUREA. *De Candolle* (*alias* Diporidium atro-purpureum, *Wendl.*; *alias* Ochna arborea, *Burchell*; *alias* O. serrulata, *Hochstetter*; *alias* O. Natalitia, *Meisner*; *alias* O. Delagoensis, *Ecklon*). A greenhouse shrub, of some beauty, from Southern Africa. Belongs to the Ochnads. It has produced its handsome yellow flowers in the Royal Garden, Kew. Said to have been introduced in 1823. (Fig. 84.)

A native of South Africa, east of the Cape, as far as Delagoa Bay, varying in size, in the solitary or racemose flowers and in the size and notches of the leaves, which are sometimes sharply serrated, sometimes nearly entire. It derives its name from the dried state of the plant, when the large persistent calyxes become purple-brown, especially when in fruit. In the living plant, the bright yellow flowers with pale yellow-green calyx enliven the greenhouse in the month of March.

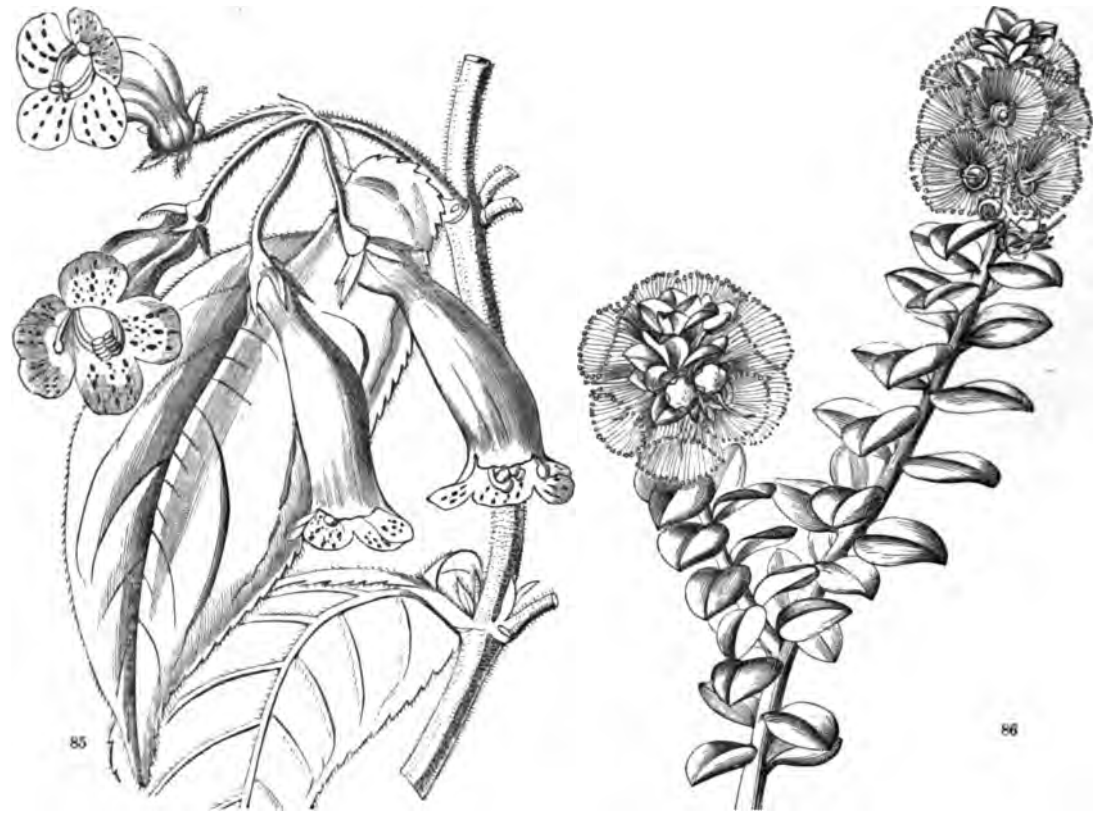
The history of its having at last flowered, after refusing to do so for twenty-seven years, is thus given by Mr. Smith:—"Thinking it would be benefited by a greater warmth during winter, and having accommodation in the Palm-house, it was placed there last Autumn. The result was, that in April we were agreeably surprised to see it profusely covered with its pretty, sweet-scented flowers. Several other plants have flowered similarly for the first time on being placed in a greater degree of heat, which shows that with our long-continued low temperature in winter and spring, and deficiency of bright sunshine in summer (as compared with the Cape), our usual greenhouse climate is not adapted for the perfect development of this and other slow-growing Cape and New Holland plants."—*Botanical Magazine*, t. 4519.

MOUSSONIA ELEGANS. *Decaisne.* A hothouse Gesneread, with orange and yellow flowers, from Guatemala. Introduced by M. Van Houtte. (Fig. 85.)

Stems and leaves covered with soft hairs. Leaves ovate, oblong, acuminate, crenel-toothed. Umbels three or four-flowered Corolla scarlet with a yellow limb, spotted in lines with purple. Being a native of the mountains of Guatemala, it will flower in the open ground (in Belgium) in summer.

"The genus Moussonia was established in 1848 by M. Regel upon the *Gesnera elongata* of Graham, a plant evidently allied to, although quite distinct from the species here described, as well as from the Peruvian species described by Kunth, under the name of *Gesneria sylvatica* in Humboldt and Bonpland's *Nova gen. et sp. Amer.* One of us (M. J. Decaisne) having carefully studied the whole family of *Gesneraceæ*, the results of which examination have been partially made public

in the *Revue Horticole* for 1848, has been able to confirm the creation of the genus in question, and to include in it three species. He thinks he can also settle two synonyms which arise from a second article on *Gesneraceæ* published by M. Regel in the *Flora*, March 28, 1849, No. 12. First, the genus *Giesleria*, Reg., established on the *Achimenes picta* of our hothouses is nothing but the *Tydæa*, Dne, previously created ; second, in proposing the name *Salicia* for the genus *Gloxinia* as founded by l'Héritier, M. Regel departs from the rule of nomenclature which invariably attaches a generic name to the species which first served as a type ; to conform to this rule the name of *Gloxinia* should be reserved for *Gloxinia maculata*, l'Hérit. and to its true analogies, whilst *Gloxinia speciosa*, *caulescens*, and the species and varieties analogous to them should be designated by the name of *Ligeria*, Dne."—*Flore des Serres*, t. 489.



METROSIDEROS BUXIFOLIA. *Allan Cunningham.* (*alias* M. scandens, *Forster.*) An evergreen greenhouse bush from New Zealand, with box-like leaves, and heads of pale yellowish-white flowers. Belongs to Myrtleblooms (Myrtaceæ). Flowered at Kew. (Fig. 86.)

Rather a pretty plant, said to be a climber, but not evincing any tendency that way, in cultivation. It would seem that this and other plants in the damp woods of New Zealand produce, like ivy, roots from the branches, by which they scramble up the trunks of forest trees. The native name is said to be *Aki*—that of the English settlers *Lignum vitæ*. Young branches hoary. Leaves close set, spreading in four rows, ½-inch long, almost sessile, elliptical or ovato-rotundate, very blunt, leathery, glossy, rolled back at the edge, dark green above, somewhat hoary with minute hairs beneath, where they are also dotted. Principal veins about five, the lateral ones from near the base. Peduncles very short, 3-flowered from the axils of the upper leaves, and thence forming a sort of capitate leafy corymb. Calyx turbinate, slightly hairy, with five obtuse lobes. Petals elliptical, small, white. Filaments white, four times as long as the erect petals. Anthers yellow. *Botanical Magazine*, t. 4515.



THE VERY SLENDER JASMINE

[PLATE 23.]

THE VERY SLENDER JASMINE.

(JASMINUM GRACILLIMUM.)

A Stove Shrub from NORTHERN BORNEO, *belonging to the Order* JASMINACEÆ.

Specific Character.

JASMINUM GRACILLIMUM.—Plant covered with spreading hairs. Branches long, very slender, cylindrical, bent downwards; leaves one to one and a half inches long, opposite, shortly stalked, ovate cordate acute, coarsely hairy beneath. Flowers shortly stalked, in dense globose pendulous panicles, white, sweet-scented; tube of corolla two-thirds of an inch long, nearly twice as long as the thread-like pilose lobes of the calyx; limb of the corolla one and a half inches in diameter, lobes as many as nine, elliptic oblong subacute.

Sir J. D. Hooker, *Gardener's Chronicle*, N.S., vol. xv., p. 8.

THIS beautiful plant was exhibited by Messrs. Veitch of Chelsea at the meeting of the Royal Horticultural Society in December, 1880, where its merits were so apparent that the Floral Committee unanimously awarded it a First Class certificate. And we may here remark that when any plant has this distinction conferred upon it by the unanimous vote of the whole Committee sitting, the award is significant of the more than ordinary merit apparent in it.

Hard-wooded flowering plants that possess the collective properties essential to their becoming general favourites for pot culture with the gardening public seldom make their appearance; but, if we are not much mistaken, this Jasminum is destined to find favour with all who have a warm stove, more particularly as it is evidently a winter bloomer. The well-known J. Sambac has always been a favourite, its only fault being a somewhat spare flowering habit. In this important matter the subject of our plate is completely opposite, as it produces its flowers in the greatest abundance, almost every point of the branches pushing out a pair of slender shoots, on the extremities of which are borne unusually large heads of pure white highly-fragrant blossom. In fact, so unusually profuse are its flowers that they often quite weigh down the branches. Another good property it possesses is that it seems to flower equally freely when the plants are small as when they are larger, an

advantage to many cultivators who cannot afford room for large growing plants. In the many ways that white sweet-smelling flowers are used in a cut state, this Jasminum is likely to find a place with Stephanotis, Bonvardias, Tuberoses, and Gardenias, whilst it will be equally adapted for keeping up a display of bloom in the warm stove during the dull period about the close of the year. Whether its time of flowering will be confined to the particular season we speak of, or whether it will so far conform to the will of the cultivator as to bloom over a greater portion of the year, remains to be seen; but its general appearance is such as to place it in the first rank, and to make it a welcome addition to our stove flowering plants.

It is from the north of Borneo, and was found by Mr. Burbidge when out collecting in that country for Messrs. Veitch, who may be congratulated on having added one more to the many acquisitions they have placed within the reach of plant cultivators, whilst Mr. Burbidge may well feel proud of having discovered a plant that is likely to come into general cultivation. Our illustration was taken from a small specimen in Messrs. Veitch's possession.

Its requirements in cultivation as to temperature will no doubt be such as found necessary for plants generally that come from hot countries. Warmth that will answer for Allamandas and Dipladenias will most probably be requisite for this, as it is for most Bornean plants; and blooming as it does in the winter season, it is not likely to succeed without warm stove treatment. Its compact bushy habit renders it independent of much support in the shape of sticks and ties. In character of growth it is not unlike the well-known Rondeletia speciosa. An ordinary peaty soil, or a mixture of peat and loam, will no doubt answer for it.





THE SALMON-COLOURED MOUTAN.
(MOUTAN OFFICINALIS SALMONEA.)

[PLATE 24.]

THE SALMON-COLOURED MOUTAN.

(MOUTAN OFFICINALIS; SALMONEA.)

A Hardy Under-shrub from CHINA, *belonging to the Natural Order of* CROWFOOTS.

Pæonia Moutan, Salmonea. *Journal of the Horticultural Society*, vol. iii., p. 236.

WHEN Mr. Fortune first visited China, in the service of the Horticultural Society, the acquisition of new Moutans was one of the first objects to which he attended. In his "Wanderings" he mentions the beauty of the varieties seen by him at Shanghae, how he heard of yellow, and purple, and blue sorts, and at one time saw lilacs and purples, some nearly black; at another, dark purples, lilacs, and deep reds. Afterwards, having discovered that these things came from a place only six or eight miles from Shanghae, Mr. Fortune tells us that he proceeded there daily during the time the different plants were coming into bloom, and secured some most striking and beautiful kinds for the Horticultural Society.

One of these, received by the Society in April, 1846, is now figured. About its beauty and distinctness there can be only one opinion. With all the largeness and doubleness of varieties of the common Officinal Pæony, it combines that delicacy of texture and fineness of colour which exist among the Moutans alone. "The outer petals when fully blown are a pale salmon-colour; the inner have a deep rich tint of the same." The accompanying figure is in no respects an exaggeration of the beauty of this variety.

The name MOUTAN seems to be an alteration of the word *Botan*, the usual name of these plants in Japan, as we are told by Kæmpfer, who adds that it is also called *Fkamigusa* and *Hatskangusa*. As the Japanese name the common Pæony *Saku jaku* and *Kawu Junkusa*, they seem to think the Moutan and the Pæony distinct genera, in which we quite agree with them, for reasons that will be given on another occasion, when we figure a still finer variety than this. It is to be suspected also that more species than one is comprehended under the common name of Tree Pæony: even although, as is probable, the Poppy Moutan (*P. papaveracea*) should be a mere variety of the common kind; for some of the Japanese kinds are said to form rapidly a woody stem eight or ten feet high; a stature which the common Moutans would only gain after many years, in even favourable climates.

No English cold seems to affect these plants: and yet their beauty is usually impaired when in flower, by the coldness of our nights. An obvious remedy for this is to protect their blossoms with glass screens: but the same result may be had if they are grown under *north* walls, so as to retard their flowering and to lower their excitability. It will also be found that the gradual thaw which tak s place when the vernal sun has no access is a powerful safeguard against the consequences of being frozen; while, on the contrary, the rapid elevation of temperature which occurs in a sunny border is invariably productive of bad consequences.

The Chinese and Japanese are said to reckon their varieties of Moutans by hundreds, as we do our Roses. It is not improbable, now that the single and very slightly double kinds are beginning to establish themselves in Europe, that we too shall have the same dominion over them as over Camellias and Chrysanthemums. The double varieties sometimes seed; there is nothing whatever to prevent the single kinds from doing so; and it is only necessary for the imported plants to become common to secure abundance of seed, out of which a new European race is sure to arise. The largest collection of these plants yet brought to Europe is that of Dr. V. Siebold, who imported them from Japan in 1844. They are said to have been obtained from the Imperial Gardens of Yeddo and Mijako, and include all the finest sorts known in that empire. They are distinguished by the form and colour of the petals, and of the disk, styles, and stamens. None of them are completely double; most are single; some only semi-double; and hence very likely to have seeds. The blossoms are described as being very large, and in some cases very sweet-scented.

The following list of these Japanese Tree Pæonies has been circulated by Dr. V. Siebold, who has cultivated them all, as well as others, in his nursery at Leyden.

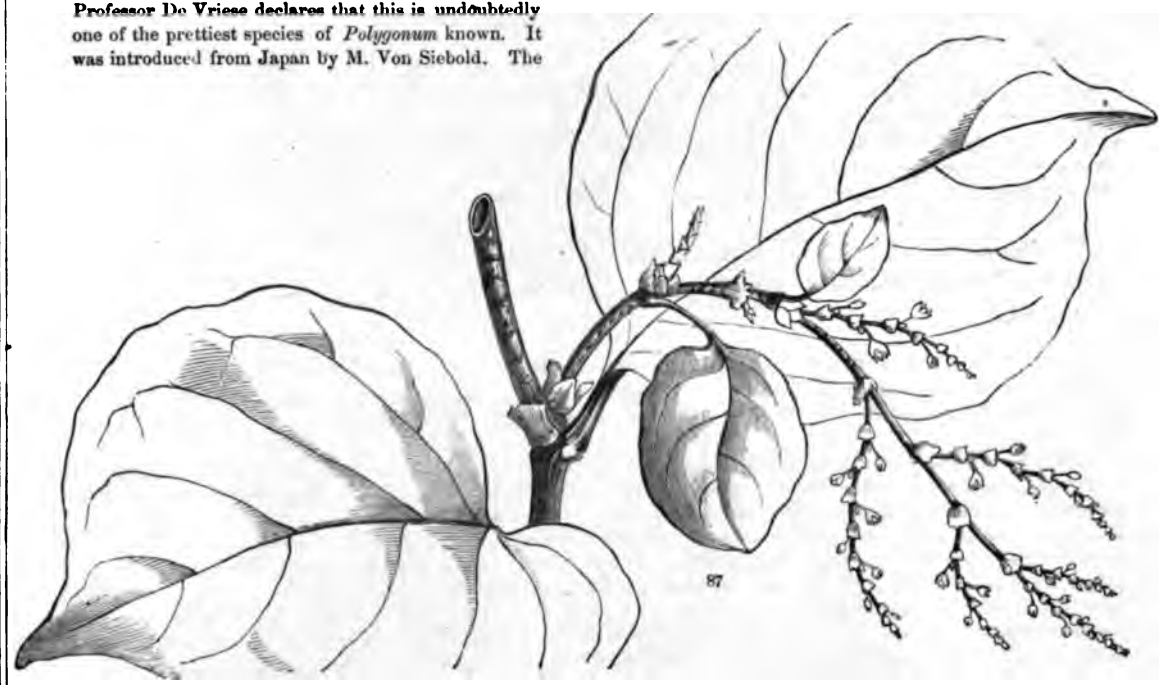
Reine Victoria. Petals white. Disk purple.
Reine des Belges. Petals white, greenish on the outside, with a pale rose-coloured spot at the base. Disk white.
Flora. Petals white, with a straw-coloured tinge, and a pale lilac spot at the base. Disk whitish green.
Duchesse d'Orleans. Petals white, with a straw-coloured tint, the outer streaked with green. Disk white.
Nymphæa. Petals pure white. Disk white.
Madame De Cock. Petals white (before expansion greenish straw-colour) dotted with dark lilac at their base. Disk yellowish.
Ida. Petals pale rose (streaked with straw-colour and tinged with green before expansion). Disk pink.
Helena. Petals pink (clear rose-colour before expansion). Disk purple.
Reinwardt. Petals dark rose, streaked with purple and carmine. Disk dark purple.
De Vriese. Petals dark rose, streaked with purple and carmine. Disk white.
Princesse Charlotte. Petals pale rose with darker streaks. Disk white.
Von Siebold. Flowers semi-double. Petals carmine red streaked with purple. Disk deep red.
Comte de Flandre. Flowers semi-double. Petals carmine streaked with purple. Disk crimson.
Van Hulthem. Petals purple red. Disk purple.
Duc de Devonshire. Petals carmine red. Disk dark purple.
Duc de Brabant. Petals pink with a lilac tint. Disk white.
Roi des Belges. Petals dark crimson with a purple tinge. Disk carmine.
Alexandre Verschaffelt. Petals purple red, variegated, dotted with white and lilac. Disk purple.
Prince Albert. Petals dark brown red, the outer ones sometimes variegated with white and green. Disk purple.
The Wild Tree Pœony. On this are worked the varieties obtained by cultivation. It deserves attention as well for the colour and sweet scent of its flowers as in a horticultural point of view, for its easy propagation by the division of its root and its hardiness, it having borne several winters in the open air without any shelter. Its colour is bright scarlet; each petal has a black spot at its base, and the stamens are surmounted with golden yellow anthers.

GLEANINGS AND ORIGINAL MEMORANDA.

POLYGONUM CUSPIDATUM. *Siebold and Zuccarini.* A tall hardy handsome broad-leaved herbaceous plant from Japan. Flowers green, inconspicuous. Belongs to the order of Buckwheats (*Polygonaceæ*). Introduced by the Horticultural Society about the year 1825. (Fig. 87.)

We translate the following account of this plant from Professor Morren's statement in the *Annales de Gand*, vol. v. p. 461: "Rhizome herbaceous, stem straight, branching, flexible, smooth, round, hollow, spotted with purple. Leaves stalked, truncated or rectilinear at the base, scarcely subcordate, broadly oval, bordered with red or with a transparent edge, cuspidate, smooth on both sides, slightly rough on the under side along the nerves. Stipules obliquely truncate, smooth, naked at the edge, few-nerved, purple, finally becoming torn, deciduous. Panicles axillary, divaricatingly branched; rachis flexible; branches slender, scurfy haired; bracts ochreiform, obliquely cuspidate-truncate; flowers in twos or threes, pedicels filiform, coloured, articulated, shorter than the tube of the perianth; stamens 8, filaments petaloid, subulate, ovary triquetrous, styles 3 divaricating, achenium elliptical, triquetrous with a 3-winged perianth, wings obcordate, opening longitudinally at the sutures.

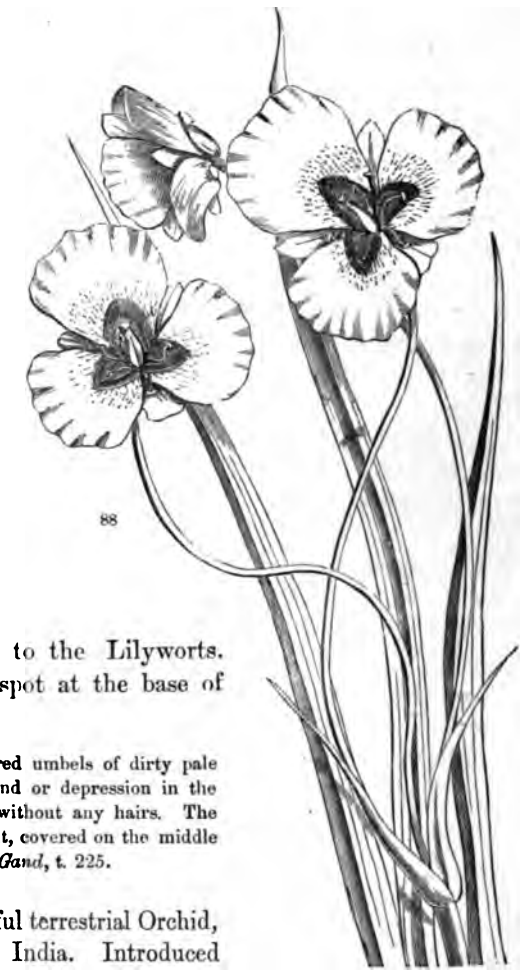
Professor De Vriese declares that this is undoubtedly one of the prettiest species of *Polygonum* known. It was introduced from Japan by M. Von Siebold. The



87

stem is sometimes 10 feet high and throws out numerous lateral off-shoots; the red stems and branches distinguish it immediately. The small but numerous flowers are greenish yellow and are borne on reddish pedicels. A mass of this plant produces a fine effect in gardens. It comes up in May and its stem dies in October. The root lives through the winter without either care or covering. It prefers a light soil. It can bear the hardest frosts. M. de Vriese has published an excellent drawing as well as an analysis of it; he says it is only to be found at present in M. Von Siebold's garden at Leyden. M. Von. Siebold declares that this plant is very fit for fixing loose sand, and it would be both interesting and useful to see what it is good for in this respect, especially as M. Von Siebold has seen it employed for the purpose throughout Japan."

Although unknown to botanists this plant has been cultivated in the garden of the Horticultural Society for a quarter of a century. It originally came from China as Houttuynia cordata; and for many years grew in an artificial swamp, where it formed a very handsome bush during the summer. It has since been found to thrive perfectly in dry garden ground. The annexed cut has been prepared from a preserved specimen of the plant in the garden of the Horticultural Society at the time of flowering. Where very handsome massive foliage is desired during summer only, this plant is of the greatest value, as, for instance, in forming rapidly a temporary screen, or in making a background to gaudy flowers with bad foliage. But as it dies to the ground with the first frost, it makes a gap which may be unsightly. We should not have thought that it would run by the root sufficiently to hold together blowing sand in the manner suggested by Dr. V. Siebold.



CALOCHORTUS PALLIDUS. *Schultes.* A tender bulbous plant from Mexico, belonging to the Lilyworts. Flowers dirty brown, with a deep triangular spot at the base of each petal. (Fig. 88.)

A dwarf grassy-leaved plant, with long loose few-flowered umbels of dirty pale brown flowers. Neither sepals nor petals have any gland or depression in the middle. The sepals are shorter than the petals, firmer, without any hairs. The petals are obovate, tapering to the base, rounded at the point, covered on the middle with a beard of hairs and fringed at the edge. *Annales de Gand*, t. 225.

CALANTHE MASUCA. *Lindley.* A beautiful terrestrial Orchid, with purple flowers. Native of various parts of India. Introduced prior to 1843.

Native of India;—according to Dr. Lindley, of "Nepal, Bengal, Ceylon, and probably Java." It blossomed in 1842 with Messrs. Rollison, at Tooting, but, though a handsome and really striking plant, it had never been figured. Our fine tuft of the plant at Kew, which blossomed in July and August, was derived from Mr. Clowes' collections.

Leaves large, herbaceous, oblong-lanceolate, tapering below, acuminated, plaited and striated. Scape erect, a foot and a half high, generally shorter than the leaves, terete, glabrous, terminated by a many-flowered raceme with handsome purple flowers. Bracts large, subulato-lanceolate, membranaceous: the upper ones coloured. Sepals and petals similar, oblong, acuminate, spreading. Lip three-parted, deep purple: lateral lobes linear oblong, subfalcate, intermediate one broadly subcuneate: the base of the lip below extends into a very long narrow spur, furrowed on one side and bifid at the point: the base of the lip above on the disc bears a five-crested tubercle, the crests transversely furrowed. This being an East Indian terrestrial Orchid, requires to be grown in a moist tropical stove. It thrives in turfy peat containing a small portion of loam. On account of its soft fleshy roots adhering to the sides of the pot, it is desirable to use a shallow wide-mouthed pot, in order to avoid tearing the roots by frequent shiftings. In summer it may be

freely watered, but the pot must be well drained, so as to allow the water to pass off freely. Shading is necessary during bright sunshine. In winter it should be placed in a drier atmosphere, and especial care must be taken that no water be allowed to lodge in the folds of the young leaves.—*Botanical Magazine*, t. 4541.

Sir W. Hooker was mistaken in saying that it had not been previously figured. An excellent representation o it was given in the *Botanical Register* for 1844, t. 37, where will be found the following remarks:—

"From the other purple species allied to it, this is readily known by the leaves as well as by the flowers. *C. versicolor* has leaves smooth on both sides; *C. purpurea* downy on both sides, especially beneath; while this has down only on the under side. *C. versicolor* has white sepals and petals; *C. purpurea*, and this, purple ones. While, however, *C. purpurea* agrees in the colour of its flowers, its lip is altogether different, being very narrow, with the lateral lobes quite round.

"*C. Masuca* should be potted in turfy heath-mould, mixed with a few pieces of potsherds. In summer it should receive an ample supply of water at its roots; and where it can be avoided, little should be allowed to fall on its leaves, otherwise the young shoots will damp off. It enjoys a humid atmosphere and a high temperature; but as the leaves are very delicate, they will soon become scorched if shading is not carefully attended to. In winter little water will be required; still it is necessary to keep the soil damp enough to preserve the bulbs from shrivelling."

CYPRIPEDIUM LAWRENCEANUM. A species found by Mr. Burbidge in Borneo, and sent by him to Messrs. Veitch. The numerous species of Cypripedium which have been brought into this country, and the many fine hybrids that have within the last few years made their appearance, have made Orchid growers somewhat difficult to satisfy with anything new amongst them. But this is a very distinct kind, and may with advantage be added to even the most select collections. This plant, coming as it does from Borneo, will doubtless require quite as much heat as any of the kinds in cultivation, needing a good supply of water whilst growing, and though less must be given when growth is complete, they must never be allowed to get so dry as species of Orchids that form pseudo-bulbs.

Ground colour of leaves very pale green, with dark mosaic blotches. Flowers equal in size to those of C. barbatum majus. The upper sepal white, with purplish shining veins running through to the edge. Petals narrow, purplish at the top, and with the usual fleshy dark worts on the limb. Lip very large, purplish-brown above, yellowish below, covered with numerous worts internally. The staminode is a special ornament.—*Gardener's Chronicle*, N.S., vol. xiii., p. 780.

LILIUM SPECIOSUM, VAR. GLORIOSOIDES. This plant was exhibited by Messrs. Veitch at one of the Royal Horticultural Society's meetings at South Kensington, during the summer of 1880. It was discovered by Mr. Maries, in the mountain districts of Central China, in which country and Japan he was collecting for Messrs. Veitch. It differs from the ordinary forms of L. speciosum in being more slender in habit; the leaves especially are much narrower. In the plant shown the spotting on the segments of the flower was much brighter, and the segments themselves were more twisted than we have seen in any of the varieties of this Lily that have hitherto appeared. In all probability it will succeed with treatment of a similar kind to that which the Japanese Lilies thrive under, the most important point with which is never to disturb them when their roots are in motion, as they, in common with all Lilies, are extremely sensitive to the slightest injury to their feeding fibres, which are most at rest just as the stems die down, at which period whatever potting or re-planting has to be done should be carried out.

Stems slender, green, two to three feet long. Leaves twenty to twenty-five, lanceolate, suberect, with the usual short flattened petiole, the lower ones five-nerved, three to four inches long, three-quarters to one inch broad, the upper ones dwindling down gradually to a length of one inch. Flower solitary in the specimen seen, the divisions oblong-lanceolate, four inches long, one inch broad in the lower part, sharply reflexed in the upper three-quarters, much crisped in the reflexed part, pure white in the upper half, with a green keel down the back, copiously covered in the reflexing portion of the lower half with scarlet papillose spots, which in the neighbourhood of the keel are exaggerated into columnar papillæ, a quarter to a third of an inch long, the basal connivent portion of the segment not at all papillose. Filaments spreading equally from the centre of the flower, more than half as long as the

segments. Anthers under an inch long. Ovary, style, and stigma as in typical speciosum.—*Gardener's Chronicle*, N.S., vol. xiv., p. 198.

AMARYLLIS MRS. BAKER. A seedling variety raised by Mr. Baker of Coombe Cottage. The flowers are very large, with broad well shaped petals that do not recurve too much, and consequently exhibit to the full their beautiful bright crimson colour. This magnificent family of blooming bulbous plants now appear to be receiving at the hands of horticulturists the attention they deserve. They have much to recommend them, being unsurpassed in the intensity and variety of colour which their large effective flowers present; and in addition they are so easily grown, and occupy so little room, as to be within the compass of any one who has a greenhouse. The principal thing in their cultivation is to make the soil in which they are potted as firm as possible, and not to disturb their roots by re-potting oftener than can be avoided.

RUBUS ROSÆFOLIUS. When flowers of this beautiful little plant were brought to one of the Royal Horticultural Society's meetings in 1880 by Mr. Green, Sir George MacLeay's gardener, few of those present recognised them to be the production of a Bramble, yet such they were. And it would be difficult to imagine anything in their way more charming; they are pure white, very double, and in general appearance more like small examples of the favourite climbing rose Aimée Vibert, than those of a Bramble. The plant is a native of the Himalayas, and is also, we believe, found in Burmah, but if in the latter country, we must suppose at a considerable altitude, as it will grow well out of doors in this country in summer, but requires a greenhouse in winter to flower it, at which season its flowers are very effective. It can be kept in small pots, which is an advantage where room is an object.

CYMBIDIUM LOWIANUM. When this fine Orchid was exhibited at one of the Royal Horticultural Society's meetings, every one who saw it was unanimous in pronouncing it one of the most distinct and handsome species introduced for some time. It forms a grand drooping raceme, the flowers individually large, and affording a combination of colours such as is seldom met with. A description alone does not convey anything like an adequate idea of the beauty which it possesses. The sepals and petals are a peculiar indescribable shade of yellowish olive-green, with delicate nerve-lines of reddish-brown; the lip is creamy yellow with red or purple spots on the base, and a large velvety maroon blotch covering a considerable portion of the extremity. It is this dark covering with its lustrous shade that livens up the whole flower, and that gives it such an uncommon appearance. We understand it is a native of Burmah, and is one of the many fine plants which Messrs. Low, of the Clapton Nursery, have introduced.

PEPEROMIA PROSTRATA. Plants of slender habit that naturally make their growth prostrate are amongst the most acceptable we can use for cultivating in baskets or pots to suspend in conservatories or greenhouses, as, independent of the individual beauty they may possess, the contrast their drooping growth presents to other plants associated with them always has a pleasing effect. This Peperomia is one of the best for the purpose we have met with for some time: its slender shoots are thickly studded with small, almost round leaves; the colour light green variegated with brown. It is a distinct and handsome plant, introduced by Mr. B. S. Williams, it is not said where from, but we suppose it will require a warm house to grow in.



THE CERVANTES ODONTOGLOT
(ODONTOGLOSSUM CERVANTESII.)

[Plate 25.]

THE CERVANTES ODONTOGLOT.

(ODONTOGLOSSUM CERVANTESII.)

A Greenhouse Orchid, from Mexico.

Specific Character.

THE CERVANTES ODONTOGLOT.—Pseudo-bulbs ovate, angular. Leaves solitary, oblong, narrowed into a channelled footstalk. Scape few-flowered. Bracts and sheaths membranous, acute, equitant, long. Sepals membranous, oblong-lanceolate, acute. Petals broader, somewhat unguiculate. Lip slightly cordate, ovate, acute, with a fleshy cup-shaped downy stalk, having in front a double tooth, and in advance of that a pair of long hairy processes. Column downy, with rounded ears.

Odontoglossum Cervantesii, *La Llave and Lexarza, Orch. Mex.* 2, 34; *Botanical Register*, 1845, t. 36.

THERE is probably not a group of Orchids the species of which are more generally beautiful than the white-lipped Odontoglots, of which this is one. They all agree in having the same habit, the same large, semi-transparent flowers, the same long membranous bracts, and the same delicacy of tint, varied by blotches of deep purple, or brown, or cinnamon.

Its natural locality is among the mountains in the west of Mexico, whence we believe it was first brought by the late Mr. Barker's collector. In general it has a pale tinge of pink; when wild it is said to be snow-white; but in the state now represented it has gained a very distinct rose-colour, which greatly augmented its beauty.

In many respects it is nearly related to the membranous Odontoglot (*O. membranaceum*), from which it differs in the following particulars: its flowers are more pink, and rather smaller, and the lip is by no means spotted at the base; its petals are much more acute; its lip is very slightly heart-shaped, and quite acute at the point; the two front teeth of the lip are very much longer and more hairy; and the concavity at the base of the lip has a much larger central tubercle.

In addition to those two species the gardens now contain the following, which approach them very nearly, and constitute the nucleus of the white-lipped group, viz.:—

O. maxillare. Flowers white; the base of the sepals, petals, and lip equally stained with crimson, and a very large yellow appendage.

O. rubescens. Flowers lilac; the sepals narrow, and spotted with crimson all over; the petals broad, and a little spotted near the base; the lip with no spots at all.

O. Rossii (alias *O. Ehrenbergii;* alias *O. acuminatum*). Flowers not half as large as the last; sepals green, spotted with crimson; petals and lip pure white, the former only spotted with crimson at the base.

O. stellatum. Flowers much smaller than in the last; both sepals and petals green and spotted; lip lilac in the middle, white at the edge, and strongly toothed.

There are also some other species of the groups still to introduce from the west of Mexico, which are even finer than those now enumerated.

It does not much signify in what kind of material this is grown, provided only that it be of such a nature as to detain damp, while water passes off freely and air replaces it. Fibrous peat and decayed leaves are among the best substances; the management of such plants is more important. On this head Mr. Gordon's directions are among the best we have.

"Injury is often effected by a sudden rise of temperature by fire-heat in winter, while little or none is caused if the rise is occasioned by sun-heat; care should therefore be taken to guard against a rise of temperature by fire-heat, particularly in midwinter; rather suffer a depression of a few degrees of heat in very severe weather than use over-strong fires, which will over-dry the atmosphere, and, on the other hand, create too much moisture if water is supplied. Moisture, however, is by no means injurious to Orchids, provided they can part with it freely, but they are impatient of stagnant damp.

"When in a dormant state they should receive no more moisture than is sufficient to prevent their leaves from shrivelling; hence many of the more tender kinds do much better on blocks of wood suspended from the roof, where they can part with the superabundant moisture freely, than in pots. Nature herself indeed sets us an example to follow in regard to moisture, for we find, where the atmosphere is saturated with moisture (and a truly moist atmosphere cannot exist without a corresponding amount of heat), that the Orchids climb the loftiest trees; but, as the climate becomes drier, so they descend, until at last they are to be found growing upon the surface of the ground or upon rocks in shady places."



THE PURPLE-LIPPED ONCID.
(ONCIDIUM HÆMATOCHILUM.)

[PLATE 26.]

THE PURPLE-LIPPED ONCID.

(ONCIDIUM HÆMATOCHILUM.)

A Stove Epiphyte, from NEW GRANADA, *belonging to the Natural Order of* ORCHIDS.

Specific Character.

THE PURPLE-LIPPED ONCID.—(Sect. *Plurituberculate.*) Bulbless. Leaves oblong, flat, thick, sharp-pointed, spotted, growing singly. Racemes compact, stiff. Sepals distinct, and the petals all of similar form, spathulate, wavy; lip roundish, with auricles at the base; the crest scarcely evident at the base, wavy in front like the letter W, thence raised into an eminence, with a toothlet on each side. Wings of the column rounded, curved downwards, somewhat lobed.

THE accompanying drawing was made in September, 1847, from a plant in the possession of Messrs. Loddiges, and we believe it is found in their list under the provisional name of *O. luridum purpuratum*. They had imported it from New Granada; but it does not occur among any dried collections which we have examined from that country.

In foliage it resembles the Carthagena Oncid (*O. Carthaginense*) and its allies; the leaves being hard, stiff, dull green, spotted with brown, and destitute of any evident pseudo-bulb. The flowers, too, grow in the same manner, but they are very different in details of structure, as well as in colour and size. The sepals and petals are a warm greenish-yellow, strongly blotched with rich chestnut-brown. The lip, on the other hand, is of the richest crimson, except near the base, where it fades into bright rose-colour. The crest, by the minute peculiarity of which Oncids are often most certainly known, resembles the letter W, having in the rear a short, flattish, narrow space, and in front a well-defined projection, with a small tooth on each side.

By these circumstances it is readily distinguished from the neighbouring species, in none of which such an arrangement occurs, varied as are the forms assumed by the tubercles of their crest. In all the varieties of the Carthagena Oncid there is, for instance, a pair of strong warts in place of the small teeth, one on each side of the anterior elevation, and the W-like body is divided into two distinct V's. In the sanguine Oncid the two posterior tubercles are more oblong, projecting with a furrow along the middle. In Professor Morren's new Rosette Oncid (*O. cosymbephorum*), nearly allied to this, there is quite a bunch of tubercles at the base of the lip.

Among Oncids this purple-lipped kind is one of the best, being inferior to none except Lance's, The contrast between the crimson of its lip, the greenish-yellow ground-colour of the petals, and their rich cinnamon spots, is of rare occurrence, and produces a charming effect.

Every one who has studied the genus Oncidium, or endeavoured to ascertain the names of his species, must have felt the task to be one of extreme difficulty, in some measure owing to the want of any sufficiently precise classification of the genus. What was sufficient when the number of species was small, became useless as they increased in number; and that which succeeded has proved insufficient in its turn. We have therefore endeavoured, upon a full review of the subject, to effect such a classification as may meet the exigencies of the case, now that the discovery of new species has much slackened, and that the main forms are probably ascertained.

In the first place, it is necessary to eliminate all those singular and little known species, of which *O. serratum* figured in another page, and Mr. Bateman's *O. microchilum* may be taken as examples. These have very distinct stalks to their sepals, and a lip so much smaller than the other parts, as in some cases nearly to escape observation. They constitute the true *Cyrtochilums* of Humboldt, but have nothing to separate them generically from Oncidium.

In all the other species the lip is the largest part of the flower.

Of these some have the leaves placed with their edges vertically, or "equitant;" others have the leaves tapering, like an onion; and the remainder have the ordinary flat leaves.

Among the herd of flat-leaved species some have the side sepals united, more or less, so as sometimes to give the flowers the appearance of having only four divisions instead of five; others, on the contrary, have five divisions, unmistakeably distinct. The first may be called *Tetrapetalous*, the second *Pentapetalous*, as we formerly proposed.

Some of the Tetrapetalous series have the true petals considerably larger than the sepals. In others, sepals and petals are of the same size.

Among the Pentapetalous set some have the lip entire, although in most it is distinctly eared. Some have it narrowest, some broadest at the base. For the separation of the narrow-based ear-lipped species into groups, there seems to be nothing more useful than the modifications of the crest. In one group the crest is a hairy cushion; in a second, it consists of a very few (not more than four) tubercles; in a third, the number of tubercles is greater; in a fourth, they are surrounded by minute warts.

In this way a dozen well-defined groups are obtained, under which about 150 species, of which the principal part are in gardens, may be readily arranged.

The fine species now figured belongs to the section having a pentapetalous structure with many tubercles on its crest. The remainder of the section is as follows:—

1. O. suave, *Lindl. in Bot. Reg.*, 1843. *misc.* 22.—Mexico.—Like O. reflexum, but the flowers are much smaller. Sepals and petals chocolate colour tipped with yellow; lip yellow with a cinnamon-brown middle. Has a slight agreeable odour.
2. O. Suttoni, *Bateman, in Bot. Reg.*, 1847. *misc.* 8.—Guatemala.—Leaves grassy. Flowers small, yellow and olive coloured; not worth cultivation.
3. O. tenue, *Lindl. in Journ. Hort. Soc.* iii. p. 76 *ic.*—Guatemala.—A species of little beauty, resembling *O. suave*. Flowers small, yellow, mottled with dull brown.

4. O. pentadactylon, *Lindl. in Ann. Nat. Hist.*, xv.—Peru.—Flowers small, in a large panicle—often altogether abortive ; not in cultivation, nor worth it.

5. O. maizæfolium, *Lindl. in Orchid. Linden.* No. 78.—New Granada.—A mountain plant. Flowers bright yellow, spotted with red. Not in cultivation.

6. O. ramosum, *Lindl. in Bot. Reg.*, sub. fol. 1920. alias *O. Batemannianum*, Knowles and Westcott, Floral Cabinet, 3. 183. t. 137.—Brazil.—A fine species, with gay pale yellow flowers in a branched panicle as much as five feet high.

7. O. retusum, *Lindl. in Bot. Reg.*, sub t. 1920.—Peru.—A beautiful species, with deep chestnut and yellow flowers, and a yellow lip.

8. O. oblongatum, *Lindl. in Bot. Reg.*, 1844, *misc.* 11.—Mexico.—Like O. reflexum, but with coloured pseudo-bulbs and a speckled stem. Flowers very yellow, large, and handsome.

9. O. Barkeri, *Lindl. in Bot. Reg.*, 1841, *misc.* 174. *Sertum Orchid.*, t. 18.—Mexico.—A very handsome plant, with large yellow flowers with rich brown spots on the sepals and petals. Raceme simple.

10. O. unguiculatum, *Lindl. in Journ. Hort. Soc.*, i. 303, *ic.* —Mexico.—Near O. Barkeri, but stem erect, and branched, lip longer and narrower, and tubercles of the crest narrower. Lip bright yellow ; sepals and petals yellow, speckled with brown. Very handsome.

11. O. Pelicanum, *Martius, Bot. Reg., misc.* 216., 1847, t. 70.—Mexico.—Very like O. reflexum, from which it differs in the tubercles being smooth, not downy, and the lateral lobes of the lip smaller in proportion to the intermediate segment.

12. O. reflexum, *Lindl. in Bot. Reg.*, sub. t. 1920.—Mexico. —A branched species, in the way of O. altissimum, but smaller. Flowers yellow, spotted with brown, except the lip.

13. O. nebulosum, *Lindl. in Bot. Reg.*, 1841, misc. 175 ; alias *O. Geertianum*, Morren in Ann. Gand. 1848, Feb.—Guatemala.—Flowers large, pale yellow, with faint spots of brown.

14. O. citrinum, *Lindl. in Bot. Reg.*, t. 1758.—Trinidad.—Flowers bright yellow, with faint traces only of greenish blotches.

15. O. leucochilum, *Bateman Orch. Mexic.*, t. 1 ; alias *O. digitatum*, Lindl. in Benth. plant. Hartweg. p. 94.—Mexico and Guatemala.—A charming species, with greenish flowers speckled with crimson, and a white lip fading to yellow.

16. O. sphacelatum, *Lindl. in Bot. Reg.*, 1842, t. 30—Mexico and Guatemala.—A fine handsome and branching species with yellow flowers spotted with rich brown. There are two varieties, of which the large flowered alone deserves cultivation.

17. O. altissimum, *Swartz, Bot. Reg.*, t. 1851.—West Indies.—Flowering stems sometimes 10-13 feet long. Flowers yellow and brown ; inferior to many others, notwithstanding its long panicles, which, however produce a striking effect when they have room to develope.

18. O. Baueri, *Lindl. Gen. and Sp. Orch.* 200., *Bot. Reg.* t. 1651.—Panama and Tropical America.—Much like the last, but the panicle more compound, and the column-wings truncate.

19. O. ensatum, *Lindl. in Bot. Reg.*, 1842, *misc.* 15.—Guatemala.—Also very like the last, but the leaves straight, long, and stiff, like sword-blades.

20. O. pictum, *Humb. Bonpl. and Kunth, nov. gen.* and *sp.* i., t. 81.—Popayan.—Like O. altissimum, but the panicle is more compact, the flowers larger and more yellow, and the edge of the leaf-sheaths very wavy.

21. O. sanguineum, *Lindl. Sertum*, t. 27 ; alias *O. Huntianum.* B. Mag., t. 3806 ; alias *O. roseum*, Lodd.; alias *O. Henchmanni*, Lodd.—La Guayra—A very variable plant near O. Carthaginense. Flowers small, blotched with crimson upon a straw-coloured ground.

22. O. hæmatochilum.—Of this plate.

23. O. cosymbephorum, *Morren, Annales de Gand.* t. 275—? —Flowers very pretty, bright rose colour, spotted with crimson and tipped with yellow. Lip cinnamon brown.

24. O. carthaginense, *Swartz*, alias *Epidendrum guttatum* Linn. ; alias *O. luridum*, Bot. Reg. t. 727 ; alias *O. intermedium*, Floral Cabinet, t. 60.—West Indies and tropical America—Another very variable plant, usually having dull olive brown speckled flowers ; but in the variety called *guttatum* they are rich brown and yellow, and very handsome. Other varieties are also known.

25. O. Lanceanum, *Lindl. in Bot. Reg.*, t. 1887.—Surinam —The finest of the section, with large deep brown speckled flowers and a rich violet lip. Fragrant as Vanilla.

26. O. Cavendishianum, *Bateman Orch. Mex.*, t. 3 ; alias *O. pachyphyllum*, Bot. Mag. t. 3807.—Guatemala.—Leaves thick, fleshy, erect. Flowers large, bright yellow.

27. O. bicallosum, *Lindl. in Bot. Reg.*, t. 12, 1843.—Guatemala.—Very like the last, but flowers larger, slightly scented, with two great tubercles on its lip, besides smaller ones.

28. O. cultratum, *Lind. in Ann. Nat. Hist.*, xv.—Popayan.—A small, dwarf species, with not more than ten flowers in the panicle. Not in cultivation.

To this enumeration of the species in the Plurituberculate Section it may be useful to add a tabular view of the whole arrangement proposed in the beginning of this article.

I. Microchila. Labellum nanum. I. Cyrtochilum H.B.K.
II Macrochila. Labellum dilatatum.
A. Folia equitantia. II. Equitantia.
B. Folia teretia. III. Teretifolia.
C. Folia plana.

1.	IV. Tetrapetala macropetala.	Sepala lateralia connata.	Petala multo majora.
2.	V. Tetrapetala micropetala.	Sepala lateralia connata.	Petala sepalis subæqualia.
3.	VI. Pentapetala macropetala.	Sepala lateralia libera.	Petala multo majora.
4.	Pentapetala micropetala.	Sepala lateralia libera.	Petala sepalis subæqualia.

* labellum indivisum ; (v. apice tantum lobatum; v. utrinque unidentatum) VII. Integrilabia.

* * labellum auriculatum trilobum
= basi angustius, v. lobo terminali subæquali.
a. Cristâ pulvinatâ s. villosâ. VIII. Pulvinata.
b. Cristâ tuberculatâ (nec pulvinatâ)
‡ tuberculis 2—4. IX. Paucituberculata.
‡ ‡ tuberculis 5—00, segregatis. X. Plurituberculata.
‡ ‡ ‡ tuberculis 5—10, verrucisq. circumstantibus. XI. Verruco-tuberculata.
= basi manifestè latiua. XII. Basilata.

GLEANINGS AND ORIGINAL MEMORANDA.

CITRUS TRIFOLIATA. *Sir J. D. Hooker.* This is a free flowering, handsome shrub, evergreen, but annually casts its leaves. It comes from Japan, and has been grown in a sheltered border at Kew for a good many years uninjured by frost; it is not so well known as it deserves to be. It blooms in spring, at which time its pure white flowers are very effective. Like most others of the Citrus family, it will, no doubt, thrive in any ordinary free soil, such as a mixture of free loam and peat.

A glabrous shrub with stout spreading terete smooth green shining branches, and straight thorns an inch long and upwards. Leaves appearing after the flowers, three-foliate; petiole about half an inch long, flattened; leaflets elliptic, sessile, crenulate, obtuse, emarginate, coriaceous, dotted with pellucid oil glands; lateral often oblique, about an inch, the terminal one and a half inch long. Flower solitary in the axils of the spines, shortly pedicelled, about an inch in diameter. Sepals four or five, small, oblong, concave, deciduous. Petals four or five, two-thirds of an inch long, obovate, almost clawed, concave, incurved, snow-white. Stamens eight or ten, inserted in a thick annular pubescent disk; filaments flattened, connate at the base, reddish below the middle. Anthers oblong. Ovary globose; stigma short, crenate; ovules one to each cell.—*Botanical Magazine*, 6513.

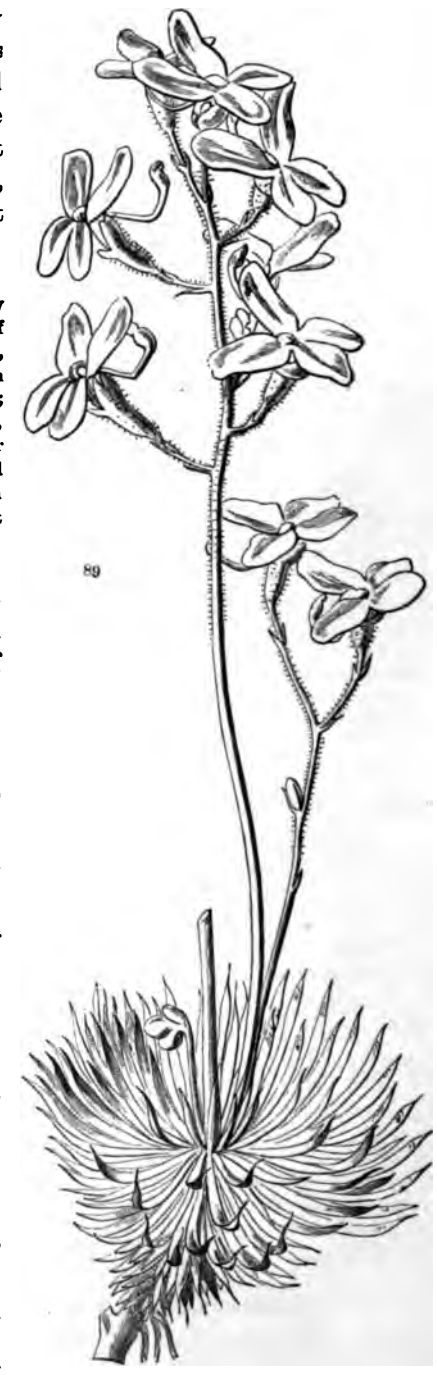
SAGENIA LAWRENCIANA. *Moore.* A very fine Fern from Madagascar, where it grows in the shade of dense forests in a humid atmosphere. Mr. L. Humblot, who discovered it, describes it as "a splendid Fern, with a trunk or caudex three to four inches in height, the fronds attaining a length of two feet or more, and spreading gracefully from the crown." The country it comes from, although it is found at a considerable elevation, points to its requiring a moderately warm house to grow it properly; in other respects it will, no doubt, succeed with ordinary treatment.

Fronds very large, ovate acuminate, glabrous, pinnate below, pinnatifid above; pinnæ all somewhat falcate, and distinctly acuminate, the lower ones obliquely deltoid, much enlarged on the posterior side, deeply pinnatifid near the base, becoming sinuately lobed upwards; upper ones oblong-acuminate, the larger entire on the upper, sinuately lobed on the lower margin, confluent, with a narrow sinus, gradually smaller upwards, entire; rachides and costæ glossy black, very distinctly marked on the under surface, strigose above; veins compoundly anastomosing, the primary ones pinnately disposed, parallel-curved in an upward direction, running out into the reticulations of the margin, somewhat flexuose, about half an inch apart in the middle entire segments, more widely separated (one inch) in the middle parts of the lower pinnæ; secondary veins in three to four irregular series between the primaries; tertiary veins forming a close network with numerous free divaricate veinlets in the ultimate areoles; sori large, mostly confined to a row on each side the primary veins, within or on the border of the primary areoles, compital; indusium broad cordate-reniform.—*Gardener's Chronicle*, N.S., vol. xv., p. 9.

CRINUM PURPURASCENS. *J. G. Baker.* A tender stove Amaryllid from the west coast of Africa, requiring heat to grow it. It would appear to be found in both Fernando Po and Old Calabar. It belongs to the C. amœnum and C. Americanum section of the family,

and was first introduced early in the present century, but is little known, being rarely met with until Messrs. Veitch brought it under notice by recent importations. It is a stately growing species with elegant flowers. Its cultural requirements will be similar to others of this fine family, which thrive under a brisk heat, with full light, and a fair amount of moisture to the roots during the growing season, but should be kept drier when at rest, with a somewhat lower temperature.

Bulb ovoid, two inches in diameter; neck short. Leaves twenty to thirty, contemporary with the flowers, spreading, one and a half or two feet long at the flowering time, an inch broad, dark green, much undulated at the edges. Scape slender, subterete, tinted with purple, under a foot long. Umbel sessile, six to ten flowered; spathe-valves small, deltoid. Flower rotate, faintly scented, white, tinted on the outside with purple; perianth tube slender, five or six inches long; limb half as long as the tube; segments a third to half an inch broad. Stamens arcuate, shorter than the perianth limb; filaments bright red; anthers half an inch long. Style bright red; stigma minute, capitate.—*Botanical Magazine*, 6525.



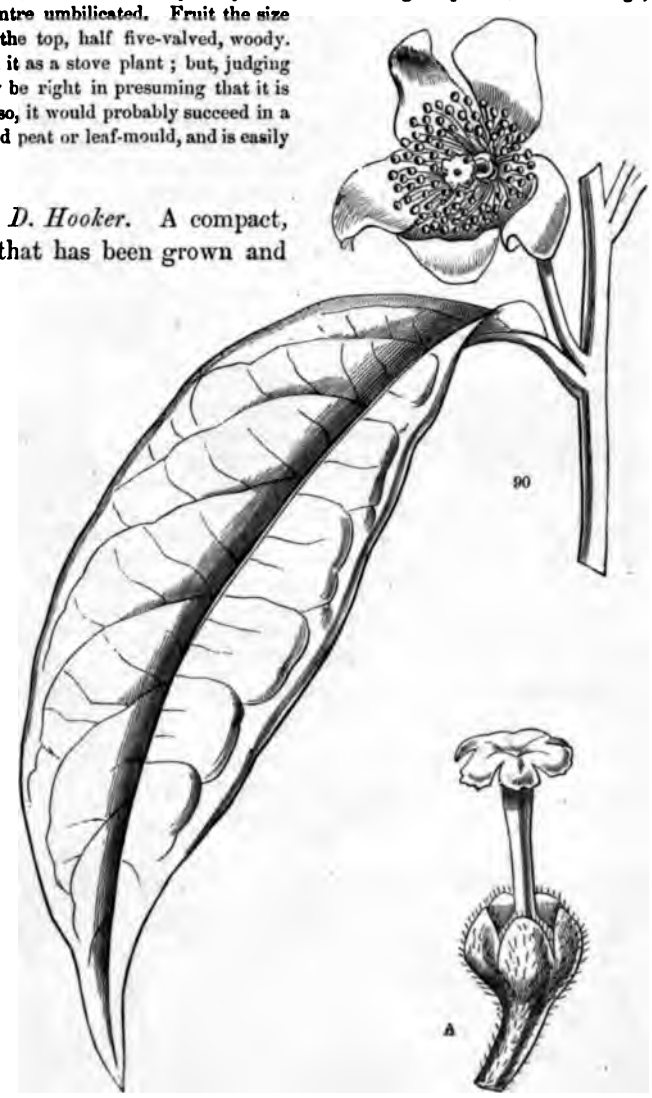
STYLIDIUM SAXIFRAGOIDES. *Lindley.* A beautiful little greenhouse herbaceous plant, with lemon-coloured flowers. Belongs to the order of Styleworts. Native of Swan River. Introduced by Messrs. Veitch and Co. (Fig. 89.)

This charming greenhouse plant, raised from seeds from the Swan River Settlement, was sent by Messrs. Veitch and Sons of Exeter to the May Exhibition of the Horticultural Society for 1850, under the name of *S. ciliatum*. That plant, however, is a very different though nearly allied species, with the panicle compound, and, as well as the scaly scape, clothed with long patent hairs, tipped with dark-coloured viscid glands, and with flowers not half the size of the present one. Root perennial, dividing at the crown so as to bear copious rosettes of densely imbricated, spreading, linear leaves, slightly incurved, yellow-green tinged with purple, tapering at the base, acute at the point, and there bearing a long hair or bristle; the margins especially roughly fringed. Scapes one or more from the centre of each rosette, a span or more high, quite smooth (except above), and there, and upon the flower-stalks and ovary, calyx and outside of the corolla, are copious, short, glandular hairs. Flower-stalks with two glandular, oblong, red bracts above the middle. Ovary oblong, green, crowned with the oblong red lobes of the calyx. Corolla large (for the size of the plant), yellow.

As regards their habit and places of growth, Styleworts may be compared to species of several British genera; such as *Statice*, *Jasione*, *Phyteuma*, *Plantago*, *Samolus*, and even *Drosera*. This species is a native of Swan River, and must be treated as a greenhouse plant; it requires no more artificial heat than is necessary to protect it from frost, and like many other small plants, it will thrive best when kept in a cool pit or frame; but care must be taken that it does not suffer from damp in winter. Light peat soil is found to suit it.—*Bot. Mag.*, t. 4529.

GORDONIA JAVANICA. *Hooker.* A tea-like stove plant from Java. Belongs to the Natural Order of Theads. Flowers white, in the autumn. Introduced by Messrs. Rollison. (Fig. 90, A represents the calyx, style, and stigma.)

Our Garden is indebted to Messrs. Rollison, of Tooting, for the plant of which a specimen is here figured. It was discovered by their collector in Java, probably in the mountains; and has much the general habit of *Thea* or *Camellia*, when its blossoms appear, in August and September. Our plant is about two feet high, branched, and generally glabrous. Branches terete. Leaves alternate, elliptical-lanceolate, coriaceous, evergreen, acuminated, entire, below tapering into a short petiole. Peduncles solitary, axillary, single-flowered, from the base of most of the upper leaves, and shorter than the leaves, erect, bearing two or three deciduous, spathulate, green bracteas below the calyx. Calyx of five very concave rotundato-elliptical, erect, slightly hairy sepals. Petals five, obovate, white, spreading, obliquely twisted. Stamens very numerous. Ovary globose, obscurely five-lobed, five-celled, hairy. Style columnar. Stigma peltate, of five large, rounded, somewhat leafy, rays or lobes, the centre umbilicated. Fruit the size of a large garden-pea, globose, depressed at the top, half five-valved, woody. Not being aware of its locality, we have treated it as a stove plant; but, judging from the nature of many of its allies, we may be right in presuming that it is from an elevated and temperate region, and if so, it would probably succeed in a warm greenhouse. It grows readily in loam and peat or leaf-mould, and is easily increased by cuttings.—*Bot. Mag.*, t. 4539.



HELICHRYSUM FRIGIDUM. *Sir J. D. Hooker.* A compact, dwarf growing Alpine from Corsica that has been grown and flowered with Messrs. Backhouse in the York Nurseries. The treatment most likely to suit it will be a well-drained elevated position in free porous soil.

A tufted, low herb, stems three to four inches long, decumbent, slender, spreading from the perennial root, then ascending, clothed with soft silky silvery hairs. Leaves one-fourth to one-third of an inch long, lower much shorter, loosely imbricating all round the stem and branches from the base to the tips. Heads solitary, terminal, sessile, one-third to two-thirds of an inch in diameter. Involucre obconic; bracts linear, oblong, obtuse, imbricate in many series, woolly, the innermost half an inch long and spreading, opaque and white for half their length. Receptacles connate, smooth, naked. Flowers of the ray in several series, tubular, slender, three-toothed; of the disk larger, narrowly funnel-shaped, five-lobed, glabrous. Anther cells with slender lobes. Style arms truncate. Pappus hairs free, in one series, very slightly thickened towards the tip, scabrid.—*Botanical Magazine*, 6515.

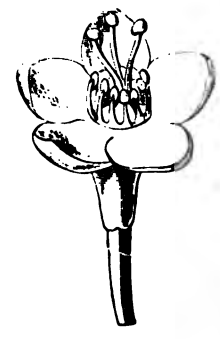
SALVIA PITCHERII. A blue flowered kind, very handsome, of small or medium growth. It is an excellent subject for pot culture, flowering in the autumn months. It is easily grown from spring struck cuttings. It was shown by Mr. Cannell, in September, 1880, at South Kensington, and was much admired.

COCCOLOBA MACROPHYLLA. *Desfontaines.* A noble simple stemmed erect tree, with large leathery leaves and straight spikes of crimson flowers. Belongs to the Buckwheat Order (*Polygonaceæ*). Native of South America (?). Introduced by the Royal Botanic Garden, Kew. (Fig. 91.)



One of the most striking plants which flowered in the great stove of the Royal Gardens during the year 1850 is that here represented, of which plants were long since received from Paris, under the name of *Coccoloba macrophylla* of Desfontaines. The name is far from appropriate, for the leaves yield greatly in size to the *C. pubescens*, the latter being three or four times the size of the present. Our plant, however, equals the *pubescens* in height (our largest plant being twenty-three feet high): it tapers gracefully upwards, is leafy all the way up, and terminated at the top by a dense compact thick club-shaped raceme of flowers, of which the rachis, pedicels, and flowers are of the richest scarlet. A plant, with simple or scarcely divided, furrowed erect stems, twenty to thirty feet high; leafy from below to the top. Leaves alternate, distant, dark green, a foot or more long, horizontally spreading, cordate-ovate, half-stem-clasping, sessile, acute or acuminate, strongly nerved, wrinkled and reticulated, rather blistered. Raceme terminal, subsessile, erect, two or more feet long, the flowers so numerous and dense that they appear to form a compact cylindrical spike; every part of a rich scarlet colour, save the stigmas, which are yellow. Tube of the calyx funnel-shaped; limb cut into 4–6 rounded concave lobes. Stamens 8–12, monadelphous below. Ovary triquetrous, red. Styles 3. Stigmas capitate. Fruit berried, red. The genera *Coccoloba*, *Triplaris*, and *Podoptera* are the tropical representatives of the Order *Polygonaceæ*, and may be viewed as examples of the genera *Rheum*, *Rumex*, and *Polygonum*, taking the form of trees or shrubs. They are natives of the West Indies and tropical America, and often attain a considerable height. They generally have large entire coriaceous leaves, and bear spikes or racemes of flowers, succeeded by bunches of berry-like fruit, which, as many of the species inhabit the shores, have given rise to the English name, "sea-side grapes." It requires to be kept in the stove, grows freely in light loam, and may be increased by cuttings treated in the usual way for tropical plants of like nature.—*Botanical Magazine*, t. 4536.

ROGIERA AMŒNA. *Planchon* (*alias* Rondeletia thyrsoidea of Gardens). A hothouse shrub, with clusters of rose-coloured flowers. Native of Guatemala. Belongs to the Cinchonads. Introduced by Mr. Skinner. (Fig. 92.)

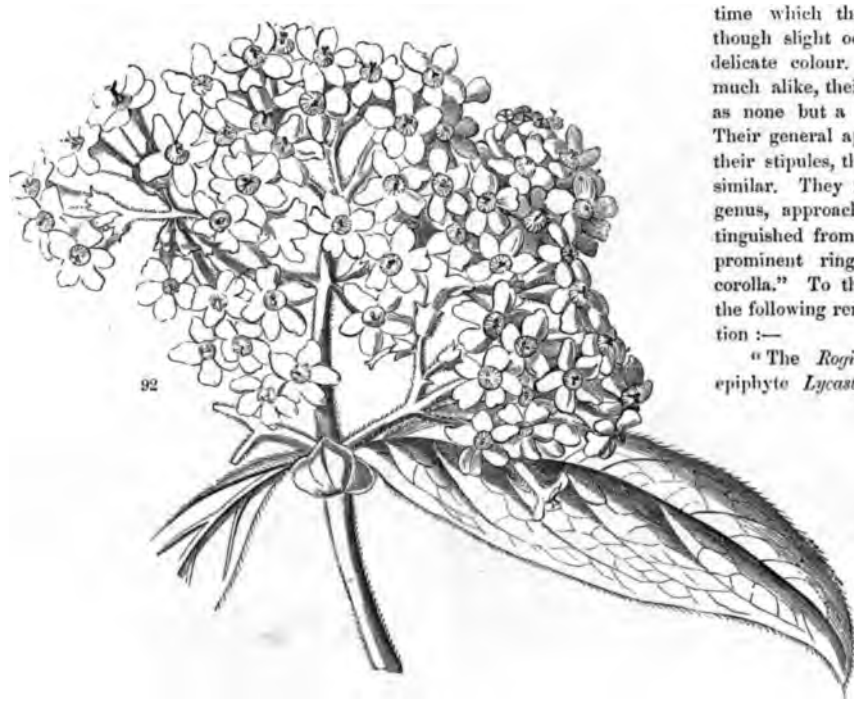


This, and other species resembling it, appear occasionally from among the earth and rubbish hanging to the Orchids imported from Guatemala. They resemble Viburnums, and more especially Laurustines, but with red or rose-coloured flowers. That now figured is common under the name of Rondeletia thyrsoidea, and is a species of considerable beauty. All the parts are covered with soft hairs. The leaves are oblong, rather the broadest at the base, nearly sessile, with large ovate intermediate stipules. The flowers, of a bright rose a little mixed with yellow at the throat, are in very short compact roundish cymes

terminating the young branches. The lobes of the calyx are five, obtuse, short; the corolla is salver-shaped with its five flat lobes oblong and emarginate, while the tube is slightly enlarged upwards. M. Planchon makes the following remarks upon the genus in the *Flore des Serres*, t. 442.

"By a great good fortune we are able to create at least two well defined genera from the chaos of different species thrown together under the name of *Rondeletia*, and to make one of these genera known by four new species, all ornamental.

The four species of *Rogiera*, of which we speak, inhabitants of the temperate regions of Guatemala, where *Lycaste Skinneri* is found in its glory, produced, in M. Van Houtte's houses, their corymbs of pretty pink flowers, the limb of which, spreading like a star, encloses a tuft of golden hairs by which their throat is closed. Their want of size and brilliancy is compensated by the time which they last, their agreeable though slight odour, their profusion, and delicate colour. All four species are much alike, their differences being such as none but a botanist can appreciate. Their general appearance, their foliage, their stipules, their inflorescence, are all similar. They form a perfectly natural genus, approaching *Rondeletia*, but distinguished from it by the absence of the prominent ring in the throat of the corolla." To this M. Van Houtte adds the following remarks upon their cultivation :—



"The *Rogieras*, like the splendid epiphyte *Lycaste Skinneri* which their branches perhaps support, inhabit the high, and consequently temperate regions of Guatemala. They grow vigorously in our climate in the open air, in the shade in summer, and are contented with a cold or temperate house in winter. If cultivated in a hot-house their period of flowering is hastened, as it may be also by other means. The soil they prefer is a light mixture of peat or leaf-mould and a little sand. They should be frequently watered. They may be propagated by cuttings, under a bell-glass, in a moist atmosphere and on a warm bottom."

The four species which M Planchon enumerates are *R. amœna, Menechma, Roezlii*, and *elegans;* they seem to differ in very slight circumstances. In the same work this author proposes a genus, also cut off Rondeletia, for which he offers the name of *Arachnothryx*, and to which he refers the Rondeletias *buddleioides, laniflora*, and *reflexa* of Bentham with the *discolor* of Humboldt and some others.

CYPRIPEDIUM GRANDE. *H. G. Reichenbach, f.* This is a most promising hybrid variety, raised by Mr. Seden, at Messrs. Veitch's Royal Exotic Nursery; the result of a cross between C. caudatum and C. Roezlii.

A strong, vigorous growing plant, more so than the dark variety of C. caudatum. From its parentage it can scarcely fail to be a fine thing when the plants get fully established.

CALANTHE BARBERIANA. *H. G. Reichenbach, f.* A beautiful hybrid variety, raised by Mr. J. T Barber Old Hall, Spondon, Derby.

A robust grower, with flowers of the C. vestita character, but more slender, of the purest white, yellow at the base of the lip and at the inferior face of the column, in some cases with a slight dash of purple in front of the area.—*Gardener's Chronicle*, N.S., vol. xv., p. 136.

POTENTILLA OCHREATA. *Lindley.* A hardy shrub with yellow flowers, belonging to the Roseworts. Native of the Himalayas. Flowers in September. Introduced to the Botanic Garden, Glasnevin, by Major Madden. (Fig. 93.)

This very curious and handsome plant bears a near relation to the Shrubby Potentil, so well known in Gardens. It was found in Sirmore by Capt. Gerard; and we have a wild specimen from Dr. Royle, from some other part of the Himalayas. It forms a dwarf hairy bush, with weak spreading brown branches. The leaves are between pinnate and digitate, short-stalked, with membranous dilated brown stipules as long as the stalks; the leaflets vary in number from five to nine, are grey, oblong, rolled back at the edge, and much wrinkled, whitish and hairy on the under side; the uppermost pair are decurrent at the base, the others taper to the point of insertion; some are usually two-lobed. The flowers are terminal, nearly sessile in the garden specimen, but conspicuously stalked in those found by Capt. Gerard. There are five bracts external to the calyx, linear-lanceolate, very hairy, with a distinct red scabrous keel: the sepals are of the same length, triangular, yellow inside; the petals nearly circular, firm and bright yellow.

When first received from the Botanic Garden, Glasnevin, it was remarked to be so much stouter in all its parts than the Ochreate Potentil, that it was mistaken for some variety of the Bush Potentil (*P. arbuscula*, Don; alias *P. rigida*, Wallich); for the wild specimens of the species have very narrow leaves, white with long hairs, and a more slender manner of growth. A more careful examination, however, shows that this is really a mere garden state of the Ochreate. The Bush Potentil is a plant of more vigorous growth, with bright green, not grey foliage; the leaflets in threes, or at most in fives, and by no means wrinkled on the under side; its flowers are, moreover, each furnished with ten bracts, either wholly separate, or partially united in pairs, a circumstance by which it is immediately distinguishable from all the forms of the Shrubby Potentil (*P. fruticosa*). It is well figured in Wallich's Plantæ Asiaticæ; but very ill defined by Lehmann.

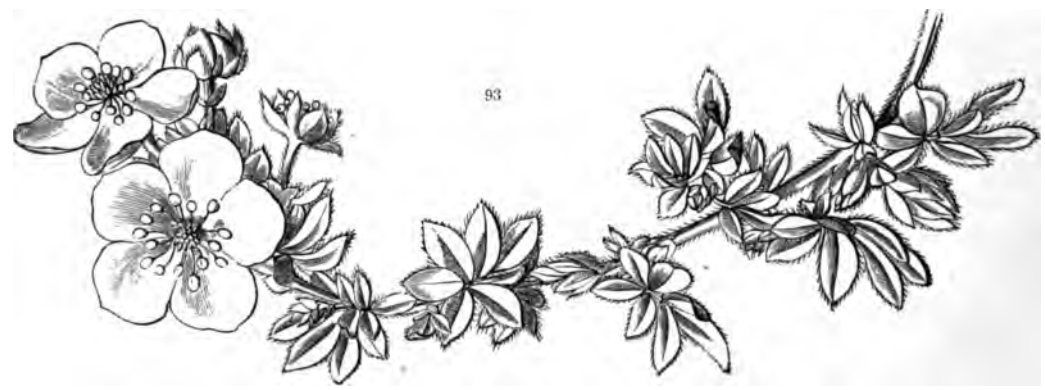
The following short characters will serve to distinguish the truly fruticose Potentils, which form a very peculiar section of that great genus:—

* FLOWERS YELLOW.

1. The Shrubby Potentil (*P. fruticosa*, L.; alias *P. floribunda*, Pursh). Bracts five, narrow, smooth on the keel, longer than the sepals. Leaflets five, linear-lanceolate.
2. The Bush Potentil (*P. arbuscula*, D. Don; alias *P. nepalensis*, Id.; alias *P. rigida*, Wallich). Bracts ten, the length of the sepals.
3. The Ochreate Potentil (*P. ochreata*, Lindley in Wallich's Catalogue). Bracts five, rough on the keel, the length of the sepals. Leaflets oblong, five to nine, much wrinkled beneath.

* * FLOWERS WHITE.

4. The Sales of Potentil (*P. Salesovii*, Steph.) An erect bush. Leaves hoary beneath, serrated at the edge.
5. The Glabrous Potentil (*P. glabra*, Loddiges). A half trailing bush. Leaves smooth, entire at the edge.





THE CLOSE-HEADED BEJARIA.
(BEJARIA COARCTATA.)

[PLATE 27.]

THE CLOSE-HEADED BEJARIA.

(BEJARIA COARCTATA.)

A Half-hardy Evergreen Shrub, with Crimson Flowers, from the ANDES *of* NEW GRANADA, *belonging to the Order of* HEATHWORTS.

Specific Character.

THE CLOSE-HEADED BEJARIA.—Branches shaggy with spreading hairs. Leaves oval, acute, on short stalks, closely imbricated, glaucous beneath; the stalk and midrib shaggy, otherwise smooth. Flowers deep crimson, in very close corymbs; stalks short, covered with rusty wool; the calyx nearly smooth. Petals erect, nearly parallel (not spreading). Style long, projecting.

B. coarctata: *Humboldt and Bonpland, Plantæ æquinoctiales*, vol. ii., p. 125, t. 121.

THIS genus is little known in Europe. Mutis named it after his friend Professor Bejar, of Cadiz: but Linnæus, misreading *j* for *f*, published it under the erroneous name of Befaria. It should be written as above, and sounded Beharia. It is nearly related to the Rhododendron, from which it differs in its petals being all distinct, overlapping each other, and not united into a tube. The species inhabit the Alps of Peru and Mexico, where their beauty becomes fully developed, and rivals that of the Azaleas and Rhododendrons of the United States and India.

The plant now figured seems to have found its way to Europe both through England and Belgium. To our own country it was sent by Mr. Purdie for His Grace the late Duke of Northumberland; and it was at Syon House that it flowered, for the first time in Europe, under the care of Mr. Ivison; we also believe that Mr. Linden's collectors, who found it near Pamplona, at the height of 8,500 feet, also furnished a supply of fresh seeds. A third traveller from whom it has been derived was Messrs. Veitch's collector Lobb, who found it on the mountains of Peru. From one of his specimens a short account of it was given in the *Gardener's Chronicle* for 1848, with a woodcut which we reproduce for the sake of showing the very inferior appearance of the plant in a wild state, and the

nature of the hairiness, which is merely represented by colour in M. Constans' figure. It has hirsute branches, woolly flower-stalks, and a nearly smooth calyx, with seven or eight smoothish, blunt, ovate sepals, whose edges are a little woolly. The flowers are deep rich crimson, and very closely arranged. Each consists of seven or eight smooth petals. The leaves, when very young, are in the wild plant woolly on the under-side; when full grown are perfectly smooth, shining, rather convex, nearly sessile, and glaucous on the under-side. The nature of the longer hairiness is peculiar, and is more like



Befaria coarctata, from a wild specimen.

what Botanists call raments than ordinary hairs, that is to say, it consists of long narrow thin plates tapering to a point, filled with a brown fluid, and composed of many rows of cells. Mixed up with them is a close wool or fur, much shorter, and composed of curved, or hooked, entangled, also brown, hairs.

We have little doubt that this is the plant represented by Humboldt and Bonpland under the name of *B. coarctata*, notwithstanding some small discrepancy in their description of the hairiness; for we know that such mountain plants vary much in the amount and nature of the wool that invests them at different seasons. The species is, however, totally different from what is published in the Botanical Magazine, t. 4433, under the same name, which Sir William Hooker



B. Lindeniana.

does not appear to have recollected had been previously given to the subject of this plate. This error was pointed out by M. Hérincq, who, in reproducing the figure, called the species *B. Lindeniana*. This plant has also flowered in the great collection at Syon, and was exhibited by Mr. Ivison at one of the exhibitions in the garden of the Horticultural Society, when the accompanying figure was made. It has much shorter hairs on the stem even when young, and they soon give way to a mere ferruginous down. The leaves are perfectly smooth, longer-stalked, flat, spreading, oblong, becoming blunt, although often sharp-pointed when young; and instead of the rich deep green of the close-headed Bejaria, they have a yellowish cast. The flowers, which are in loose corymbs, are pale pink, streaked with a darker rose-colour. In the Botanical Magazine their petals are represented as spreading as flat as those of a Mallow; but in the Syon plant they are closed, as in our cut. We suspect this to be very near Mr. Linden's *B. tricolor*, which is, however, said to be yellow at the base of the corolla.

Closely related to these, but perhaps finer than any, is a plant raised by Messrs. Veitch & Co. of Exeter. We presume it to be that which Mutis called *æstuans*, because, it would seem, it glows like a fire. Mr. William Lobb found it in the province of Chachapoyas, at the height of 8000 feet, and describes the flowers as rose-coloured. Messrs. Veitch of Exeter have raised it. The branches are covered with coarse hairs. The leaves are fringed with blackish bristles; when young they are covered beneath with a rusty secretion; when full grown they are very glaucous on the under-side, and dark green on the upper. The calyx and flower-stalks are shaggy with coarse hairs, and clammy with a sticky juice which oozes out from the surface.



Bejaria æstuans, Mutis.

Although we venture to attach to this species the name of *æstuans*, judging from the definition of it in books, yet it is quite possible that it may be another species. Indeed, if M. Hérincq is right in stating that the plant of Mutis has the habit of *Rhododendron ferrugineum*, it must be something quite different. No doubt it is distinct from Mr. Linden's *B. æstuans*, which Hérincq calls *myrtifolia*, and which is said to have long lanceolate leaves, very much narrowed towards the point.

It may be worth while to add to these memoranda a list of the Bejarias now or formerly in cultivation, with their supposed aliases :—

1. B. racemosa *Vent.*—Probably lost.
2. B. glauca *H. B.*—Formerly flowered at Ghent.
3. B. ledifolia *H. B.*—Fl. des Serres, t. 194.
4. B. Lindeniana *Hérincq* (*alias* B. coarctata *Hooker*).—Bot. Mag., t. 4433.
5. B. coarctata *H. B.*

6. B. myrtifolia *Hérincq* (*alias* B. æstuans *Linden*).
7. B. æstuans *Mutis*.
8. B. cinnamomea *Lindley*.*
9. B. drymifolia *Linden*.
10. B. densa *Planchon* (*alias* B. microphylla).
11. B. tricolor *Linden*.
12. B. ——, an unknown species at Syon, with lanceolate leaves, and red branches covered with viscid stiff hairs.

The proper mode of managing these Bejarias is still uncertain. They are charming plants, and worth any amount of care and trouble. We believe that the treatment of Indian Azaleas will suit the strongest, and that of Rhododendron Chamæ-Cistus the weakest. A damp atmosphere, and free circulation of air in summer, are no doubt essential. Mr. Linden cuts the matter short, as will be seen by the following extract from his priced Catalogue:—

Bejaria (Befaria) æstuans . . .	30 francs.	Bejaria (Befaria) glauca . . .	10 francs.
„ coarctata	15 „	„ ledifolia	10–50 „
„ dens. (microphylla) . .	25 „	„ tricolor	40 „
„ drymifolia	40 „	„ sp. nova.	„ „

"Réputé à tort comme étant d'une culture difficile, ce magnifique genre réclame au contraire *peu de soins*. Planté en pleine terre, il fleurit abondamment et n'exige en hiver qu'une température très-basse et peu d'humidité."

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* "Messrs. Veitch are also in possession of a third species of this genus, with purple flowers, found on the Andes of Caxamarca, at the height of 8000 feet. Its flowers are very much injured in the specimen before us, but appear to be smaller than in the species now figured (B. æstuans), and are arranged in a close panicle. The leaves are remarkable for being covered on the lower side with a bright brown wool, on which account it may be named The Cinnamon Bejaria (*Bejaria cinnamomea*).

"Sp. Char.—Branches downy and hispid. Leaves slightly downy above, covered beneath with thick ferruginous wool. Flowers in a close terminal panicle, with very woolly and hispid stalks and calyxes."—*Gardeners' Chronicle*.

[redacted]



THE OVAL AND THE PALLID HOYAS
(HOYA OVALIFOLIA AND PALLIDA.)

[PLATE 28.]

THE OVAL AND THE PALLID HOYAS.

(HOYA OVALIFOLIA AND PALLIDA.)

Stove Climbers from TROPICAL INDIA, *belonging to the Natural Order of* ASCLEPIADS.

Specific Characters.

I. *THE OVAL* HOYA.—Leaves fleshy, narrow, oval, 3-nerved, rolled back at the edge. Peduncle rather shorter than the leaf, and smooth. Corolla fleshy, with ovate acute segments. Coronet-lobes acute, revolute at edge. *Left-hand figure.*

Hoya ovalifolia: *Wight and Arnott, Contributions to the Flora of India*, p. 37 (?).

II. *THE PALLID* HOYA.—Leaves fleshy, ovate, feather-veined, turned back at the edge. Peduncle rather shorter than the leaf. Corolla fleshy, smooth, with ovate acute segments. Coronet-lobes acute, revolute at edge. *Right-hand figure.*

Hoya pallida: *Lindley in Botanical Register*, t. 951.

FOR the knowledge of the first of these species we are indebted to the Chatsworth collection, from among Mr. Gibson's Indian collection. Along with it is represented on the right hand the Pallid Hoya, which blossomed at Chatsworth at the same time. A comparison of the two figures will show their differences better than mere description.

The Pallid Hoya was originally observed at Syon, whence, in 1825, materials were supplied for a figure in the Botanical Register. Its origin was then unknown; but the Chatsworth plant now proves it to be a native of India, and we possess specimens from the Burmese Empire collected by the late Mr. Griffith. It is distinguished from the Fleshy Hoya (*H. carnosa*) not only by a yellowish tint which replaces the dark heavy green of that species, and by its sweeter smell, but also by the form of its leaves, which are acute and exactly ovate; that is to say, similar in figure to an egg divided longitudinally, while in the Fleshy Hoya they are as nearly as possible truly elliptical. The umbels of flowers also are smaller. In the Botanical Register the artist has made the stalk of the umbel appear far too short in an unsuccessful attempt at foreshortening.

The Oval-leaved Hoya has much the appearance of the last; but differs in its flowers being distinctly yellow instead of straw-coloured; and in the form and construction of the foliage. The leaves are about 6 inches long, in the form of a narrow ellipse, differing very little in width near either end. Instead of the veins diverging regularly from the midrib in the same way as in the Pallid Hoya, there are three principal veins which proceed together from a little above the base, giving the leaf a triple-nerved venation. So that in fact these two species belong to two different types of structure, and stand in two different sections of M. Decaisne's classification of the genus.

These charming species each require the same treatment as the Fleshy Hoya, and trained with it along the rafters of a house, grow in perfect harmony, and produce an extremely agreeable variety without occupying more room than one of them would require.

GLEANINGS AND ORIGINAL MEMORANDA.

CESTRUM CALYCINUM. *Willdenow* (*alias C. viridiflorum*, Hooker). A greenhouse shrub, from Buenos Ayres, with deliciously scented green flowers. Belongs to the Nightshades. Flowers in October. (Fig. 94.)

This charming shrub would be passed by without notice if it were not for the exquisite fragrance of its green flowers. Out of flower it looks like an Oleaster (*Elæagnus*). It was originally introduced through the Glasnevin Garden. With the exception of the upper side of the leaves, the whole plant is covered with a grey starry down, which gives it a dull appearance. The leaves are ovate-oblong, slightly heart-shaped at the base, on short stalks. The flowers appear in short axillary spikes, with a calyx much wider than the narrow tube of the downy corolla, which, however, widens upwards into a true funnel-shaped figure. The filaments are not toothed. The fragrance of the flowers is perceptible both day and night, but most so in the day.

Sir W. Hooker, in naming it *C. viridiflorum*, was not aware that it had been previously called *C. calycinum* by Willdenow.



94

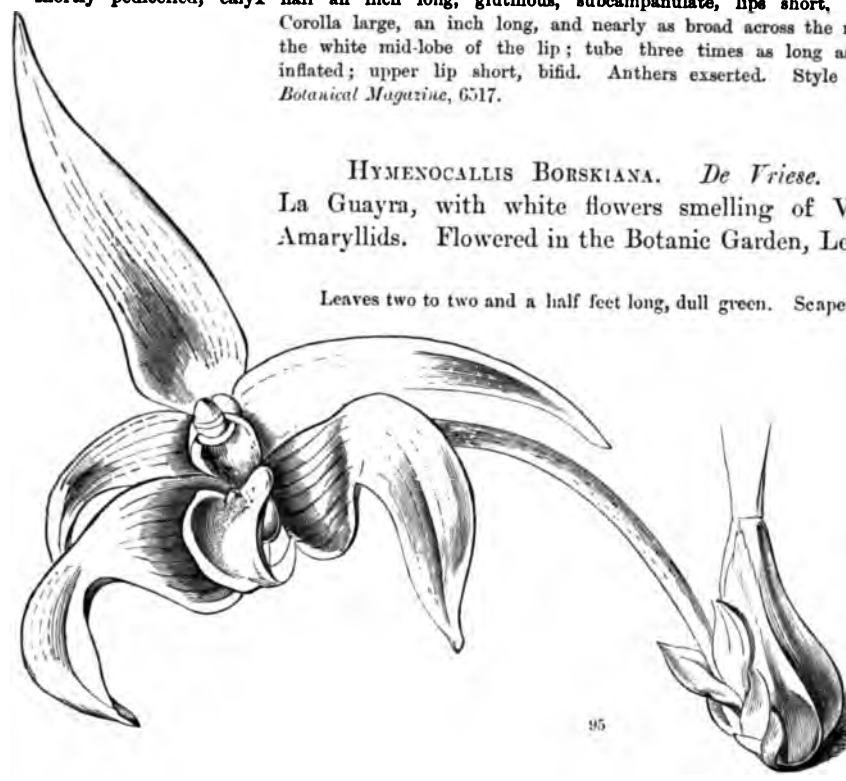
SALVIA PIANS. *Sir J. D. Hooker*. This handsome perennial is from Kashmir, and is a welcome addition to this showy genus. It bloomed out of doors at Kew in the July and August of 1880. Its blue and white flowers are very effective, and when better known it is likely to become a favourite. No doubt it will succeed with the ordinary treatment found to suffice for other species that will thrive outside in summer.

A perennial, two to three feet high, with stout, erect, four-angled stems. Leaves three to five inches long,

long petioled, deltoid-ovate, acute, or acuminate, base truncate with rounded lobes, or hastate with acute spreading lobes, rugose, pubescent on both surfaces; petiole four to eight inches long. Raceme simple, or branched at the base, eight to twelve inches long, very villous; lower whorls of flowers distinct, with leafy bracts; flowers shortly pedicelled, calyx half an inch long, glutinous, subcampanulate, lips short, broad, acute, lobes bifid. Corolla large, an inch long, and nearly as broad across the mouth, bright blue, except the white mid-lobe of the lip; tube three times as long as the calyx, broad, rather inflated; upper lip short, bifid. Anthers exserted. Style slender, much exserted.—*Botanical Magazine*, 6517.

HYMENOCALLIS BORSKIANA. *De Vriese.* A stove bulb from La Guayra, with white flowers smelling of Vanilla. Belongs to Amaryllids. Flowered in the Botanic Garden, Leyden.

Leaves two to two and a half feet long, dull green. Scape compressed, as long as the leaves. Flowers seven. in an umbel, white with a very thin transparent entire coronet *De Vriese, Epimetron*, 1846.



SARCOPODIUM LOBBII (*alias* Bolbophyllum Lobbii *Lindley*.) A stove epiphyte belonging to the Natural Order of Orchids. Native of Java. Flowers nankin-yellow, large and showy. Introduced by Messrs. Veitch and Co. (Fig. 95.)

One of the many good things sent from Java to Messrs. Veitch of Exeter, by their collector, Mr. Thomas Lobb. "How fine a plant of its kind this is, may be surmised, by its having been taken for a *Cœlogyne*: the flowers are full four inches across, yellow, shaded with cinnamon, spotted with light brown, and speckled outside with brown-purple: we know of no species of the genus comparable to it for beauty." Our drawing was made from the plant of Messrs. Veitch, after it had gratified the public at the May Exhibition of the Chiswick Gardens for 1850. Pseudobulbs ovate, smooth, green. nearly as large as a pigeon's egg, springing from a scaly creeping stem terminated by a stalked, oblong, leathery, solitary leaf. Scape arising one from the side of each pseudobulb, yellowish, spotted with brown, shorter than the leaf, its base sheathed with imbricated, convex, spotted scales. Flowers large, solitary, spreading. Sepals lanceolate, acuminated, deep yellow, the upper one externally marked with purple spots running in lines; the lateral ones falcate, streaked and clouded with purple. Petals resembling the upper sepal, but smaller and streaked with purple lines, reflexo-patent. Lip cordato-ovate, acuminate, reflexed, yellow, with minute orange dots. This, like the rest of the numerous species of *Bolbophyllum*, is a tropical epiphyte, and requires to be kept in the warm division of the Orchid-house. It grows and flowers freely on a block of wood, suspended from the roof of the house, and having a piece of Sphagnum-moss attached. In winter an excess of moisture, either in the atmosphere of the house or in the moss or block of wood, is prejudicial; and in summer the plant must be shaded from the mid-day sun.—*Bot. Mag.*, t. 4532.

Between Dendrobes and Bolbophyls there exists a race having the large flowers of the former, and the peculiar habit of the latter, and hence referred to the one or the other genus according to the fancy of the observer. They agree with Dendrobes in having four pollen masses, and a hornless column; but they have coriaceous, not thin half-transparent flowers, and a tough leathery lip, enlarged not contracted at the base. If they had a caudicle and gland to their pollen masses, they would be Asiatic Maxillarias. They form neither horn nor spur, but are simply inflated and expanded at the base of the sepals. On the other hand, although they grow like Bolbophyls, yet they have no horns to their column, but two pollen masses, and their large leathery flowers afford a further difference. To these

plants, consisting of the *Dendrobium amplum* of Wallich, and the *Bolbophyllum Lobbii, affine, leopardinum, Cheiri,* and *macranthum* of Lindley, the name SARCOPODIUM may be applied: with the following *distinctive* character:—

Habitus Bolbophylli. Pollinia et columna Dendrobii. Sepala coriacea, lateralia basi ventricosa. Labellum coriaceum, basi dilatatum. (Haud Bolbophyllum quod poll. 4 nec 2, et col. mutica nec cirrhata. Haud Dendrobium quod sepala et labellum coriacea basi ventricosa nec cornuta v. calcarata.)

RHIPSALIS PACHYPTERA. *Pfeiffer.* (*alias* Cereus alatus *Link and Otto; alias* Cactus alatus *Bot. Mag.?*) A trailing succulent shrub, from tropical America, with leaf-like stems, small dirty white flowers, and red fruit. Belongs to the order of Indian Figs (Cactaceæ). Flowers in winter and spring. (Fig. 96; *a*, section of flower; *b*, ripe fruit.)



This singular little plant is a native of Rio de Janeiro, from whence it was received by Sir Charles Lemon, Bart, M.P., in 1839, and flowered at Carclew in April, 1846. In its mode of growth it has considerable resemblance to some of the well-known showy species of Cactus with flat leaves, but on flowering it proved to be totally different. It requires a warm greenhouse or stove, and thrives very well when grown in a loamy soil with little water. Joints leafy, roundish ovate, compressed, nearly flat, hanging down, about 3 inches long and 2 inches broad, deeply crenated with a thick prominent, woody midrib, and distinct side ribs. They are of a bright green, tinged with reddish brown at the base and point, as well as along the margin, becoming, when old, of a rusty green. Flowers solitary, sessile, small, issuing from each crenature, and of a pale brownish yellow: the buds, previously to opening, being delicately tinged with pink. Sepals five, very minute and unequal in size. Petals five, spreading ovate-oblong, obtuse at the point. Stamens numerous, filiform, erect. Style somewhat clavate, rather longer, and much larger than the stamens, divided at the point, sometimes into five, but most frequently into four lobes. Fruit a small berry about the size of a red currant, and similar in colour, with numerous small jet black seeds, embedded in the pulp.

That this is the *Cereus alatus* of Link and Otto, there can be no doubt; and consequently it is the *Rhipsalis pachyptera* of Pfeiffer; but we are by no means satisfied that it differs specifically from the *Rh. crispata* and *rhombea* of the same author, notwithstanding the white fruit of the former. We find it, however, recognised in the Prince of Salm Dyck's latest enumeration, and we bow to so high an authority.

MILLETTIA MEGASPERMA. *Sir J. D. Hooker.* This is likely to turn out a valuable addition to our tall greenhouse climbers. Its general appearance, both as to flowers and

leaves, is very like the well-known Wistaria Sinensis in the individual blossoms, and as they appear collectively in the pendulous racemes. It flowered in 1880 in the temperate house at Kew. Shelter under glass, with a little warmth in severe winter weather, will most likely be required to preserve it in health. The flowers are bright purple.

A tall evergreen climber, with dark green glossy foliage, and bears a profusion of panicled racemes of purple flowers. Leaves eight to twelve inches long, with three to seven pairs and an odd one; petiole and rachis slender; leaflets shortly petiolate, oblong or elliptic, subacute or shortly acuminate; dark green on both surfaces, glossy above. Racemes pendulous, slender, panicled, four to eight inches long, rachis pubescent; flowers numerous, two-thirds of an inch in diameter, purple, except back of standard, which is nearly white; pedicels short, slender. Calyx short, base hemispheric; lips subequal, upper truncate, lower trifid. Standard orbicular, limb emarginate, thickened at base. Wings subacute, bases auricled. Keel obtuse. Upper stamens free. Ovary many-ovuled. Pod four inches long, few-seeded, valves woody. Seeds broad, thick, two-thirds of an inch in diameter, testate, brown, hilum elongated.—*Botanical Magazine*, 6541.

PHAIUS TUBERCULOSUS. *Bl.* This is, no doubt, one of the most beautiful of all Orchids introduced of late years, and far the handsomest of the genus that has yet bloomed. When it was exhibited by its fortunate owner, Sir Trevor Lawrence, before the Floral Committee at South Kensington, it was voted a First Class Certificate by acclamation. Its indescribable beauty would recommend it to all who appreciate a beautiful flower, whether Orchid growers or not. Said to come from Madagascar.

Sepals and petals stellate, of a pure white colour; an exceedingly fine lip, with wide yellowish lateral lobes, covered with brown blotches, on an anterior obcordate wavy middle laciniæ, white, with mauve marginal spots. Three callous orange places with numerous impressions stand in the centre, directed towards a tuft of light sulphur-coloured capitate hairs. Column white, tinted with light purple in front.—*Gardener's Chronicle*, N.S., vol. xv., p. 428.

BEGONIA INGRAMII. *Henfrey.* A handsome garden hybrid, with loose drooping clusters of pale pink flowers. Requires a stove.

Said to have been raised by Mr. Ingram, of Frogmore, between *B. fuchsioides* and *B. nitida*. The leaves are four inches long, very oblique, half heart-shaped, dark glossy green, slightly ciliate and crenelled; the under side is green also. The male flowers have four decussating sepals, of which the inner are smaller; the females have five nearly equal sepals.—*Gard. Mag. of Bot.*, ii., p. 153. The placentation is that of *Diploclinium*.

SPATHODEA LÆVIS. *Palisot de Beauvois.* A hothouse tree from Sierra Leone, belonging to the order of Bignoniads. Flowers handsome, white streaked with rose. Introduced by Messrs. Lucombe and Co. Blossoms in June. (Fig. 97.)

Imperfect as are the figures and description of *Spathodea lævis* in Palisot de Beauvois, I am yet of opinion I am correct in referring to this plant. If by the term "lævis" applied to the species it is meant that there are no glands on the calyx or corolla, I may observe that however obscure on the *dried* specimens (from which M. de Beauvois' drawing and character were derived), they are apparent enough on the living plant. Our specimen is sixteen feet high; but it flowers when much smaller. Its stem is woody but soft. The leaves are alternate, except those below the inflorescence, which are often in whorls of three, all of them unequally pinnate, with from four to six pair of opposite, ovate, acuminate, coarsely serrated, glabrous, sessile leaflets. Panicle terminal, corymbose, with numerous large flowers. Calyx green, tipped with red, split open more than half way down on one side, with several dark-coloured glands near the base, irregularly toothed at the apex. Corolla campanulato-infundibuliform, white, delicately spotted and streaked with rose; tube widening upwards; limb obscurely two-lipped; upper lip of two rounded lobes; lower of three similar ones, but larger and more spreading; all slightly waved. This is a tropical tree of robust growth, requiring the temperature of the stove, and growing freely in light loam. It is propagated by cuttings planted under a bell-glass in white sand, and plunged in bottom-heat.—*Bot. Mag.*, t. 4537.



97

freely if potted in light loam and leaf-mould, and placed under the full influence of the sun in summer. It should be frequently syringed in the mornings or evenings during hot dry weather, but care must be taken that all superabundant water passes off freely, and that the soil does not remain long in a saturated state. In winter water must be given very sparingly, and the temperature of the house during the night need not at any time exceed 55°. It readily increases either by cuttings or by seeds, as also by gemmæ produced on each areole of the fruit, which ultimately form separate and distinct plants.—*Botanical Magazine*, t. 4542.

STYLIDIUM MUCRONIFOLIUM. *Sonder.* A greenhouse herbaceous plant, of much beauty, from the Swan River. Flowers yellow. Belongs to the order of Styleworts. Introduced by Messrs. Lucombe and Pince. (Fig. 99.)

IMANTOPHYLLUM MINIATUM; *var.* MARTHA REIMERS. A continental raised variety, in the possession of Mr. B. S. Williams of the Holloway Nursery.

It is a very handsome kind, superior to even the best form of Imantophyllum miniatum, the foliage is strong and broad, very deep in colour; it produces stronger flower-stems, with correspondingly larger umbels of flowers, which in themselves are very deep-coloured, the extremities being darker afford a better contrast to the yellow base. It is a very handsome plant, and will thrive under greenhouse management. Good turfy loam mixed with enough sand to keep it porous answers for all the family.

DAVALLIA ELEGANS POLYDACTYLA. *Moore.* In this we have another addition to the many abnormal forms of Ferns that result from cultivation, of which the different crested forms of Pteris serrulata, and the similarly crested varieties of Athyrium may be taken as examples. It is a very handsome plant, and will, no doubt, become a favourite with cultivators. It was raised from spores of D. elegans at Messrs. Veitch's Chelsea establishment by Mr. Schneider, under whose care the Ferns there are.

Stoutish rhizomes, which sometimes creep over the surface of the soil, and sometimes elevate themselves with a shrubby kind of habit, but are always clothed with a vestiture of pointed, spreading, reddish-brown scales. The fronds are quadripinnate in cutting, triangular in outline, from one to one and a half feet long, and as much across the base, arching in habit, and elevated on smooth round stipites one foot or more in length, which are also of a brownish colour.—*Gardener's Chronicle*, N.S., vol. xv., p. 562.

SCABIOSA PTEROCEPHALA. *Sir J. D. Hooker.* A hardy perennial in the Kew collection. It comes from Greece; found growing at considerable elevations on the mountain ranges, and blooms in July and August, forming a dense close tuft of considerable beauty. It will succeed with the usual treatment required by hardy perennials, of an open situation, and porous, well-drained soil.

Stem and branches woody, procumbent, forming patches two to three feet in diameter. Leaves one and a half inches long, petiole stout. Peduncle terminal, stout, solitary, erect, naked, tomentose, heads depressed-hemispherical, one and a half inches in diameter; flowers very many, one-third of an inch long, those of the ray horizontal, limb oblique two-lipped, those of the disk erect, regular, with a slender tube and campanulate five-fid limb; involucre cylindric, truncate, with plumose long or short awns. Corolla of the ray nearly half an inch long, tube pubescent, upper lip two-lobed, lobes short, rounded; lower lip lobed, lobes ovate obtuse; corolla of the disk flowers shorter, tube equalling the campanulate four-lobed limb. Stamens with filaments twice as long as the corolla lobes.—*Botanical Magazine*, 6526.

MARANTA CROCATA. A small compact-growing plant, with short obtuse leaves, dark green, conspicuous for the silvery sheen upon them. The flower-spikes are short, the bracts which conceal the flowers orange-coloured. It will thrive in a warm stove, in ordinary soil, either loam or peat.

HAMAMELIS ARBOREA. A hardy shrub from Japan.

The flowers are handsomer and larger than those of H. virginica, which it is not unlike. Its blooms are purple and yellow in colour, and are produced in tufts in winter from the naked, thin, leafless shoots; they are very distinct and singular in appearance.


PORTE'S VARIE OF THE INTERMEDIATE BUTTERFLY PLANT.
ÆNOFSIS INTERMEDIA: VAR. PORTEI.

[PLATE 29.]

PORTE'S VARIETY OF THE INTERMEDIATE BUTTERFLY PLANT.

(PHALÆNOPSIS INTERMEDIA, *var.* PORTEI.)

A Magnificent Epiphyte from the PHILIPPINES, *belonging to the Natural Order of* ORCHIDS.

TO convey a clear idea of what the beautiful plant here figured is, it will be necessary to say a few words about one or two other Phalænopsids. When M. Marius Porte was out in the Philippine Islands, some twenty years ago, he, it appears, discovered a single plant of a Phalænopsid, which, on its flowering with Robert Warner, Esq., of Broomfield, was pronounced by Professor Reichenbach to be a natural hybrid between P. Aphrodite (amabilis, Lindl.) and P. equestris, Rchb. (rosea, Lindl.), and is described by him in the *Bot. Zeit.*, No. 15, 1863, p. 128, as a flower of snowy whiteness, with a purple lip, the centre of which is yellow, as well as the callosity, which is marked by blackish-purple spots; the lateral sepals and petals are free from spots at their base. Since then, more specimens of this Phalænopsis have reached this country; recently Messrs. Low & Co., of the Clapton Nursery, have received some, and they sold the plant now figured to W. Lee, Esq., of Downside, Leatherhead, through whose kindness we are enabled to give the illustration. It is a decided improvement, especially in the beautiful deep colour of the markings, on P. intermedia Portei, although evidently only a form of that variety.

These hybrids, the result of a cross between species when growing wild and out of reach of the cultivator's manipulation, are very interesting. It is not in the intermediate character of the colouring of the flowers alone that their parentage may be traced far enough to be relied on as accurate; it is more in their formation, partaking as they do of that of the species to which their origin is attributed, as in the case of the plant under notice, which in the individual parts of the flowers, as well as in their being intermediate in size between the two species it is referred to, partakes of their joint character. In the whole order of Orchids there is scarcely to be found a more beautiful group than the genus Phalænopsis, their singularly lovely moth-like flowers being as remarkable

for their formation as for their charming colours: P. amabilis and P. grandiflora, each with their snowy-white petals and sepals, relieved by the purple, red, and yellow markings respectively in the centre of their blossoms, so distinct from all others; P. Luddemanniana, remarkable for the dark brown transverse bars with which the petalite and sepalite segments are marked, the whole lit up with the indescribable violet tint, like that existent in some of the Cactus family. The whole of these Phalænopsids are true Epiphytes, and are indigenous to Manilla, Borneo, Java, and adjacent parts, where the climate is warm and moist. They are devoid of the bulb-like stems so conspicuous in most Orchids, and consist of roots and leaves connected with a scarcely perceptible stem, not at all thickened or swollen out; the entire plant is of a particularly fleshy, succulent nature. This holds good in all the species. Where the stout pseudo-bulbs (already spoken of as present in most Orchids) exist, they add much to the powers of endurance which the plants possess to bear up against any hard usage to which they may be submitted, either by indifferent cultural treatment, or by being subjected to the vicissitudes of long journeys, such as are inevitable when being imported to this country; but, through their wants being better understood than formerly, and the quicker passages made than used to be possible, Phalænopsids now usually reach these shores in better condition. Hence the ordinary varieties are at the present time cheap as compared with the fabulous prices at one time paid for them; but their formation, being, as above intimated, devoid of the pseudo-bulbs, will always tend to make them far less able to bear any extremes, either of dryness in the atmosphere, or at their roots, or of exposure to the sun's direct rays, than most of the bulb-bearing species of Orchids, which pass through such trials without injury. Another thing that cultivators will do well to bear in mind is that their natural free disposition to flower is such that even small weak plants will bloom if permitted; but in their case it is much better to remove the flower-stems as soon as these appear. The flowers are also of a very enduring nature, and if all are allowed to remain on until they decay naturally they weaken the plants so much that it is no uncommon occurrence to see strong, vigorous examples much reduced in strength by profuse and long blooming. The plants thrive and retain a healthy, vigorous condition the longest when kept hung up close to the roof in a good light house, shaded from the sun whenever its rays are at all powerful, but exposed to full light at other times. Baskets or pots, in all cases not too large, well drained and filled with fibrous peat, sphagnum, and potshreds in equal quantities, suit them best, keeping them moderately well moistened during the growing season, and drier, but never so dry, in winter, as most Orchids require to be. They should have enough air every day in the growing season to dispel the superabundant atmospheric moisture of the house; the temperature of an ordinary warm Orchid house is requisite in summer, with a good rest in less heat through the winter.


Chionodoxa Lucilia.

[PLATE 30.]

CHIONODOXA LUCILIÆ.

A Hardy Perennial Bulbous Plant, belonging to the Natural Order LILIACEÆ, *from* ASIA MINOR *and* CRETE.

Specific Character.

CHIONODOXA LUCILIÆ.—Bulb ovoid, with brown membranous tunics. Leaves two or three to a stem, sheathing it for some distance above the base, fleshy, bright green, three to six inches long at the time of flowering, channelled down the face, cucullate at the tip. Scape attaining a length of four or six inches above the bulb, slender, terete. Flowers from one to ten, arranged in a very lax deltoid raceme, with minute membranous bracts, and cernuous pedicels. Perianth bright blue, or rarely entirely white, nine or twelve lines long, with an oblong tube, and six spreading oblong-lanceolate segments under a quarter of an inch broad. Filaments flat, white, unequal; the larger a sixth of an inch long, the smaller an eighth of an inch, touching edge to edge, and not forming a distinct corona, as in Puschkinia. Anthers linear, cleft at the tip, protruding out of the cup formed by the filaments. Ovary blue, sessile, globose, with a short cylindrical style, and a capitate stigma.

Botanical Magazine, 6433.

ACCORDING to Sir J. D. Hooker's account in the *Botanical Magazine*, the plant was first discovered about the year 1842, at an elevation of some 7,000 feet, amongst the snows above Bagdagh. It has been introduced to cultivation by Mr. Maw, who speaks of it thus:—"On my second day's excursion from the little Turkish village of Taktalie, which I had made my head-quarters for the examination of the interesting range of mountains including the Taktalie and Nymph Dagh, I ascended to the summit of the latter mountain; and just as we were returning, my Greek and Turkish attendants became botanically excited, and beckoned me to a spot a little way off, at an altitude of about 4,300 feet—a bank-side, thickly covered with Chionodoxa Luciliæ, the most brilliant floral display I ever beheld—a bright mass of blue and white, resembling Nemophila insignis in colour, but even more intense in effect, and round about it was a complete garden of bulbous plants, including a small yellow Fritillary, Colchicum bulbocodoides, two or three species of Tulips, some yellow Gages, Croci, and great tufts of Galanthus Elwesii, with leaves half a yard long. Of Chionodoxa Luciliæ, as a highly-decorative and perfectly hardy plant, I can speak with great confidence. The roots dug up in 1877 flowered but sparingly in 1878; but notwithstanding the late severe winter, the patches out of doors have fully recovered their transplantation, and are flowering as well as in their native habitat, forming the most brilliant tufts, in which the foliage is almost

hidden by the masses of flowers, which tell out as bright spots in the spring garden, some of the scapes bearing from eight to ten flowers, one inch in diameter. I have had it in flower for nearly a month in the cold frame, where it attains a higher stature, though not quite so rich in colour as the flowers produced in the open air. For pot culture and forcing I believe it will be very useful, and take a prominent place amongst early decorative plants. It produces seed very freely, and will therefore be capable of ready multiplication. I obtained with the typical blue form a few bulbs of a pretty pure white variety."—*Gardener's Chronicle*, N.S., vol. xi., p. 474.

These particulars at once point to the kind of treatment which the plant requires at the hands of the cultivator. The altitude in the country where it is found indigenous, almost bordering upon the snow-line, shows that in hardihood and time of flowering it will be a companion to those hardy favourite gems of spring, the Scillas, which in colour it rivals. The fact of its growing freely from seed is fortunate, as otherwise, like most bulbous plants that only increase from the off-sets they make, the propagation would be comparatively slow. As it is, the seedlings may be expected to attain full strength in two or three years, treated in a similar way to Scillas grown from seed.

Both on account of the season of its blooming—early in spring, when every flower that makes its appearance out of doors is doubly acceptable—and because of its lovely shade of blue, a colour anything but plentiful in flowering plants, this plant is an undoubted acquisition, and no doubt as it gets plentiful it will find a place in the gardens of all who delight in hardy flowers. It would appear to be somewhat sportive in colour, as occasionally it is met with in white garb. As to soil, we have no doubt that it will grow in any ordinary loam of fair quality, or in a mixture of peat and loam—always, however, in a position where there is no stagnant water present. One great point in the cultivation of spring flowering bulbous plants that make their growth early and then die down is that after blooming they have enough space for the full development of their foliage without being too much crowded with other plants, and that their leaves are in no way disturbed or interfered with until they have died down. The removal of the leaves before they have lost their vitality, and the transplantation of the bulbs after they have commenced growing, are the two principal causes of failure with hardy bulbous plants.

GLEANINGS AND ORIGINAL MEMORANDA.

VRIESIA FALKENBERGII. A handsome and distinct species of this very interesting genus of Epiphytes.

The leaves are stout and much recurved. The floral bracts, crimson and green in colour, are closely packed on a moderately tall flower-spike; the flowers are white. It will thrive in an ordinary stove, in a moderate sized pot filled with porous material, such as is used for Orchids.

ASTILBE THUNBERGII. A very handsome herbaceous plant from Japan, of much stronger habit than A. Japonica. It was shown by Messrs. Veitch at one of the fortnightly meetings at South Kensington in May, 1881, and received a first-class certificate.

The stout spreading leaves are pinnate in form. The flower-spike is about two feet high, erect and branching, at the base the branches assume a horizontal position; the whole densely clothed with the short tufted filaments peculiar to the genus, much more closely packed than in A. Japonica; they are pure white in colour.

CŒLOGYNE CRISTATA ALBA. A pure white form of the well-known C. cristata; the purity of its flowers cannot fail to make it a favourite with Orchid-growers, particularly as it will be an acquisition for using in arrangements of cut flowers, especially bouquets, for which purpose its elegant informal shape particularly befits it. The Cœlogynes of this section are easily grown plants, not requiring strong heat, the temperature of an intermediate house or cool stove doing better for them than more warmth; they like abundance of water whilst growing.

ERIGERON MULTIRODIATUS. *Sir J. D. Hooker.* This plant is from the Himalayas, being found at an elevation up to 9,000 feet. It bloomed at Kew in June, 1880. The flowers, bright purple, are borne on branching stems some two feet in height. It is a desirable addition to the class of plants to which it belongs, and will most likely succeed under the treatment found to answer for free growing hardy subjects.

Leaves radicle when present usually four to eight inches long, oblanceolate, narrowed into a rather long petiole, toothed, three to five nerved; cauline ovate-lanceolate from a broad sessile and often subauricled or semi-amplexicaul base, acuminate, erect or recurved. Heads solitary on the ends of long peduncles, two or two and a half inches in diameter, very bright purple; disk yellow. Involucre broadly hemispherical; bracts slender, pubescent, or tomentose, ciliate. Ligules three-fourths of an inch long, in two or three series, very slender, tube glabrous. Disk-flowers glabrous. Achenes small, flattened, slightly silky; pappus scanty, hairs scabrid, with an obscure ring of small outer ones.—*Botanical Magazine*, 6530.

SALVIA BETHELLII. This handsome plant was raised from seed by Mr. Bethell, now in charge of Sir R. Wallace's fine garden at Sudbourne Hall, Suffolk. If not identical, it is very nearly allied to S. involucrata; it is a handsome kind, rose-coloured, suffused with white, and makes an excellent autumn or winter flowering greenhouse plant, requiring treat-

ment such as is found to answer for other things of a soft wooded nature that are propagated in spring, and afterwards will do in the open air through the summer, with additional pot-room as required.

BEGONIA SOCOTRANA. *Sir J. D. Hooker.* A handsome dwarf-growing Begonia from the Island of Socotra, with bright pink flowers, blooming at Kew in the latter months of the year. Its season of blooming will make it doubly valuable, coming at a time when flowers are scarce; but the hot, not over-moist climate from whence it comes points to its requiring a brisk heat, with a moderately dry atmosphere during its season of flowering. In its dwarf compact habit of growth it contrasts with the majority of the species in cultivation.

Erect, stout and succulent, sparingly branched, six to ten inches high, sparsely hairy all over the stems and leaves. Leaves orbicular, peltate, four to seven inches in diameter, centre with a funnel-shaped depression, margin recurved and crenate. Flowers monœcious, bright rose-pink, one female and several males on the same inflorescence; male flower four inches in diameter; perianth segments four, obovate; stamens in a small globose head, filaments very short; anthers clavate, recurved, lip rounded; female flower smaller than male; perianth segments six, oblong, obtuse. Styles very short, stigmas horseshoe-shaped, arms not twisted, united by a pappilose belt. Ovary three-angled, one angle winged; placentas entire.—*Botanical Magazine*, 6555.

LASTREA RICHARDSII, *var.* MULTIFIDA. *Moore.* This most beautiful Fern has been certificated by both the Royal Botanic and Royal Horticultural Societies, and is a very fine kind, deserving of general cultivation by all who have a warm house, which it requires, as it comes from the South Sea Islands, whence it was imported by Messrs. Veitch. Mr. Moore describes it as

One of the handsomest of all known Ferns, differing from the typical form in having the apex and the apices of the pinnæ multifidly cut into numerous narrow pointed spreading finger-like lobes. Stipes dark purplish-brown, lamina bright green, oblong lanceolate, with one or two pairs of small abortive pinnæ. Pinnæ upwards of four inches long in the broadest part, terminating in a densely-fingered tuft of about fifty long narrow acute divisions, the apex of the frond dividing into two or more branches consisting of about seventy of these small finger-like segments.—*Gardener's Chronicle*, N.S., vol. xv., p. 104.

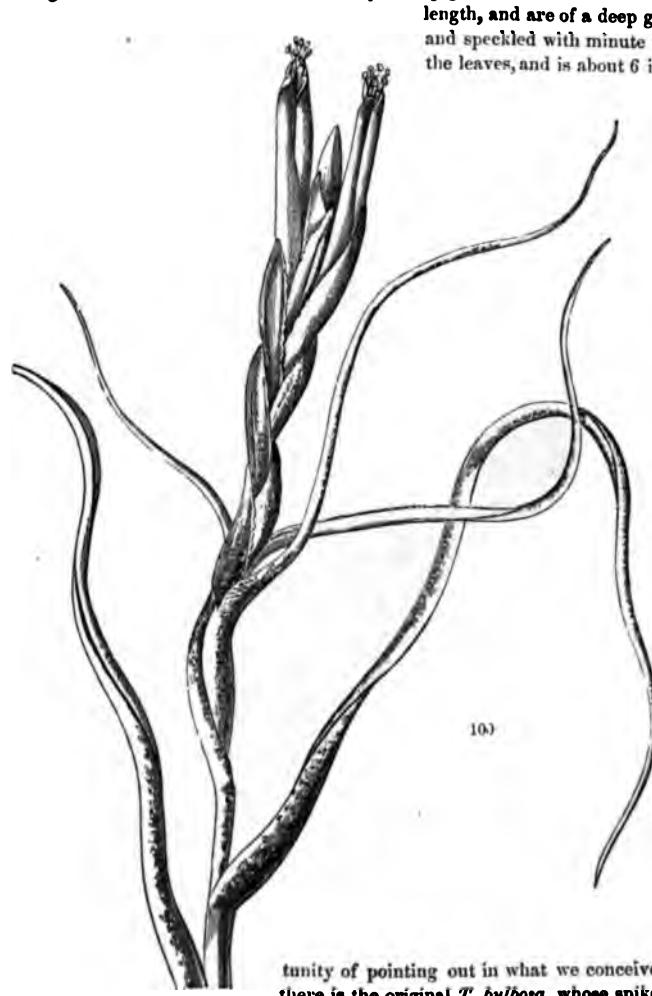
PRUNUS DIVARICATA. *Sir J. D. Hooker.* Amongst the Plum family are several of the most effective hardy flowering plants we possess, so desirable for the display they make in our shrubberies in spring. The subject under notice is one amongst a number that have been long in the country, yet comparatively little known. One advantage in cultivating as many as may be of these small-growing flowering trees is that they occupy comparatively little room, and do not smother other small-growing plants so much as trees that attain a larger size. In addition to which, the succession of bloom that is secured by cultivating a number of different species is a consideration worth taking into account. The plant under notice has for many years been grown at Kew, and is one amongst the number of fine things there, the beauty of which is never seen by those who only visit the place in summer. It comes from the Caucasus.

A small tree, ten to twelve feet high, branches numerous, slender, wide-spreading, the lower lying almost flat on the ground, the whole forming a round mass; branchlets slender, glabrous. Leaves appearing with the flowers, when young lanceolate, acuminate, serrate, pubescent in the mid-rib and nerves beneath, when fully formed two by one and a half inches long and broad, more ovate, and often subcordate, at the base, finely serrate, and glabrous beneath. Petiole slender, glabrous. Flower three-quarters of an inch in diameter, solitary from the flower-buds, peduncle short, glabrous. Calyx with ovate-lanceolate recurved lobes. Petals rounded, concave. Stamens white, with yellow anthers. Ovaries one or two.—*Botanical Magazine*, 6519.

TILLANDSIA INANIS. A stove Epiphyte belonging to Bromeliads, with scurfy, dry, twisted leaves, and violet flowers issuing from crimson bracts. Native of the province of Buenos Ayres. (Fig. 100, *a piece of the inflorescence;* 101, *a diminished figure of the plant.*)

Commodore Sulivan, C.B., who brought it to this country in 1841, on his return from the command of the South American station, presented it to Sir Charles Lemon, Bart., M.P., with whom it flowered in March, 1846. It is a native of the interior provinces of Buenos Ayres, high up the Parana, and is stated to be greatly prized there for its delicious perfume, although at no period could Mr. Booth discover that it possessed any fragrance; and it is probable that the statement referred to T. xiphiifolia,—a very different species. Like the rest of its tribe, it requires the constant heat of a warm damp stove, and similar treatment to that which is usually given to epiphytal Orchids. It thrives very well when attached to a branch of any soft-wooded tree, and suspended from the roof of the stove. In winter it must be kept dry, but during the rest of the year it can scarcely have too much water. Mr. Booth describes the recent plant thus:—

"Roots numerous, round and slender, deep brown, partly adhering to the branches of trees, or spreading horizontally, as if to draw nourishment from the air. Leaves broad at the base, closely imbricated, so as to have a sort of bulbous appearance; but otherwise flexuose and recurved, narrow, much longer than the scape, spreading and twisted, with the edges so much incurved as to leave only a deep groove from one end to the other. They vary from 9 inches to a foot in length, and are of a deep green, closely covered with brownish red blotches, and speckled with minute white scurfs. The scape rises from the centre of the leaves, and is about 6 inches high, round at the base, and covered with several sheathing leaves, which closely embrace it. Near the top, it enlarges, and becomes two-sided, with moderately large oblong acuminate sheathing, imbricated bracts, of a brilliant red, tinged with brownish green at the base. The flowers, which appear to be only two in number, issue from underneath the third and fourth bract from the top. They are erect, of a purplish lilac colour, and rather more than an inch long. Sepals? Petals three, united at the base, but so arranged, from being convolute as to form a kind of tube, very slightly recurved at the point. Filaments of the same purplish colour as the petals, comparatively broad and thin, and projecting about a quarter of an inch beyond the tube. Style the same length as the filaments, but round, and of a pale colour, excepting at the extremity, which is a greenish yellow, and 3-lobed."



100

This is nearly related to the plant originally named *T. bulbosa* by Sir W. Hooker, in his "Exotic Flora," t. 173, from a poor specimen obtained from Trinidad. But we can scarcely regard it as the same species, any more than a very handsome plant, with long spreading crimson bracts, obtained from Jamaica by Sir W. Hooker, and figured in the "Botanical Magazine," t. 4288, under the name of *T. bulbosa*, variety *picta*. There appears to be several species of Tillandsia possessing the peculiarity of having the bases of the enlarged leaves collected into a kind of bulb, but otherwise differing as much among each other as species of the same genus generally do. Since some are beautiful things, and very likely to reach our gardens, we take the present opportunity of pointing out in what we conceive their peculiarities to reside. In the first place, there is the original *T. bulbosa*, whose spike has all the bracts green and fertile, with some tendency to branch. Next it stands our *T. inanis*, with a perfectly simple spike, whose bracts are coloured red, and all flowerless, except the two uppermost. Another is the supposed variety of *T. bulbosa*, already mentioned, with the upper

leaves and bracts very long, deep crimson, apparently not scurfy, and a spike distinctly branched; the corolla being longer and white-edged: this we would call *T. erythræa;* we have the same species from Para. A fourth, *T. eminens*, is a St. Domingo plant, with the leaves much shorter than the spike, which is leafless, branched, and composed of numerous two-ranked crimson-keeled naked bracts; it may be compared to *T. polystachya*, although very different. A fifth is from Para, and is readily distinguished by a peculiar lumpish habit, an abundance of very coarse loose scurfs, spreading up to the very points of the outer bracts, which are not coloured, and a nearly simple spike sessile among the leaves, which, nevertheless, scarcely overtop it; this may be named *T. pumila*. For the convenience of our scientific readers, we put these distinctions into technical language:—

Folia radicalia basi dilatata bulbum simulantia.

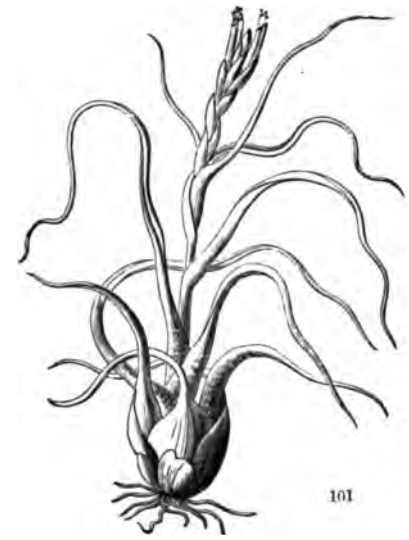
T. inanis; scapo foliis breviore, spicâ simplici basi foliosâ, bracteis viridi-purpureis lepidotis inferioribus omnibus inanibus.—*Buenos Ayres.*

T. bulbosa (Hook. Exot. Fl., t. 173); scapo foliis breviore, spicâ aphyllâ basi ramosâ, bracteis herbaceis arctè lepidotis.—*Trinidad.*

T. erythræa (alias *T. bulbosa picta* Hooker, Bot. Mag., t. 4288); scapo foliis breviore, spicâ ramosâ, bracteis foliaceis coccineis nudis (?) infimis spicâ longioribus.—*Jamaica; Para.*

T. eminens; scapo foliis altiore, spicâ aphyllâ ramosâ, bracteis nudis coccineis distichis carinatis apice uncinatis.—*St. Domingo.* The inflorescence is almost that of a branched Vriesia.

T. pumila; scapo inter folia sessili, spicâ subsimplici aphyllâ, bracteis herbaceis coriaceis ventricosis laxissimè lepidotis.—*Para.* Valves of the fruit straight, and chesnut brown; not pitch black, as in *T. erythræa.*





THE MOUNTAIN IXIOLIRION
(IXIOLIRION MONTANUM)

[PLATE 31.]

THE MOUNTAIN IXIOLIRION.

(IXIOLIRION MONTANUM.)

A Hardy Bulbous Plant from SYRIA, *and also* SIBERIA, *belonging to the Natural Order* AMARYLLIDACEÆ.

Specific Character.

IXIOLIRION MONTANUM.—Bulb ovate. Stem erect, bearing at the base linear-lanceolate glabrous leaves, and at the summit a branched umbel of funnel-shaped violet flowers, each about one and a half to two inches across. The flower segments are linear-lanceolate, three-nerved, the three outer ones with a sharp projecting point near the tip, the three inner ones blunt. Stamens six. Ovary inferior, top-shaped, glabrous.

M. T. Masters.

AMONGST the many handsome Amaryllidaceous plants we possess, there is the small group of Ixiolirions, some three or four in number, if indeed, as supposed by some well skilled in bulbs, the whole are not mere forms of the one species, *I. montanum*, the subject of our present plate. They are quite hardy, and remarkably handsome, but, except by the comparatively few people who make hardy plants their especial favourites, they are little known. *I. montanum* is a bulbous-rooted plant of medium or small size, growing to a height of some ten or twelve inches, according to the soil or situation in which it is planted; the foliage is narrow, and of a grass-like character. The flowers are produced on erect spikes, sometimes branched (but when this occurs it is no doubt owing to the plant being in a strong condition), blue or violet in colour, anthers yellow, contrasting well with the shade of the petals, which are about an inch and a quarter long by one-fourth of an inch broad, somewhat recurved; the footstalks of the individual flowers are long and slender, giving the whole an elegant appearance. It blooms about the beginning of May, and is quite distinct from the other habitants of the garden. What is probably another variety of the plant has more recently been introduced—*I. Pallasi*, from Syria, where it is said to be found

at a considerable elevation; it differs little in appearance from *I. montanum*, except that the flowers are darker in colour, having more of a purple shade in them, and in some cases the head contains a greater number. Again another plant is mentioned in the *Gartenflora*, t. 953—under the name of *Kolpakowskia ixioliriodes*, from Lake Sairan —which, by the description, differs little from the Ixiolirions that have already flowered in this country.

It would be difficult to say too much in favour of these and kindred spring blooming hardy bulbous plants; and it is a pleasing circumstance to note that they are now receiving very much more attention than has been the case for a long time past. The late Dean Herbert, as is well known, was an enthusiast in the introduction and cultivation of bulbous plants, and it seems strange that there have been so few to follow in his footsteps, further than in cultivating a comparatively small number of species, such as the commoner kinds of Lilies, which, handsome as most of them are, still do no more than represent a limited portion of the beauty existent in the many bulbous plants that will thrive in this country in the open air in all but the worst districts for gardening. We are indebted to Mr. Ware, of Tottenham, for an opportunity of figuring the plant, which, like so many other scarce subjects, thrives beautifully in the Hale Farm Nurseries.

In the cultivation of this and others of the rarer and less vigorous species of bulbous plants, it is essential that they should be kept sufficiently far apart from rank-growing, fibrous-rooted, herbaceous plants, or shrubs, that not only overgrow them, but, what is equally destructive in its effects, impoverish the soil within their reach to an extent that weakens them and gradually reduces them to a feeble condition. In place of this they should have an open, airy, but at the same time well sheltered position, so that their early leaf-growth will not be liable to receive a check by keen cutting winds. The soil also should be moderately porous, and completely free from anything approaching stagnant moisture; if the subsoil is not naturally porous enough to allow the water to pass through it, draining so far as found wanting should be carried out; the soil likewise ought to be deep enough to admit of the roots descending as far as they naturally are inclined to go. Another matter, which in itself may appear of little importance, is that these, as well as all other deciduous plants, should have the exact spot in which they are planted marked with tallies, inserted sufficiently deep in the ground to avoid any risk of their being disturbed in the operations of hoeing and weeding; otherwise the plants are always in danger of being injured by some or other of the implements used in cultivating the ground.



THE SWEET TRICHOPIL.
(TRICHOPILIA SUAVIS.)



[PLATE 32.]

THE SWEET TRICHOPIL.

(TRICHOPILIA SUAVIS.)

A Stove Epiphyte, from CENTRAL AMERICA, *belonging to the Natural Order of* ORCHIDS.

Specific Character.

THE SWEET TRICHOPIL.—Pseudo-bulbs, thin, oblong, obcordate, one-leaved. Leaves broad, oblong, wavy, leathery, nearly sessile. Peduncles about two-flowered. Petals linear, nearly straight. Lip very large, three-lobed, wavy, crisp, closely rolled up at the base, suddenly inflated upwards. Hood of the column three-lobed, with all the lobes fringed, the middle one being the narrowest.

Trichopilia suavis: *Supra*, p. 32.

AMONG the Vandeous Orchids, that is to say, among the Orchids having waxy pollen-masses on a well-defined gland, and usually with a caudicle in addition, stands conspicuous a group which we have elsewhere named BRASSIDS, comprehending the genera Oncidium, Odontoglossum, Brassia, Cymbidium, and many more. (See *Vegetable Kingdom*, p. 181.)

It is among these genera that the genus Trichopil is stationed, and well defined by its four pollen-masses at the end of a long wedge-shaped caudicle, its convolute free lip, and the remarkable hood of the column, divided, in the species hitherto seen, into three unequal lobes. Helcia, which is nearest it, has a flat lip with a distinct fleshy hypochil, and a fringed, not hooded, anther-lid.

It is not improbable that many more Trichopils lurk in the forests of Central America than we have any actual knowledge of. To the Cork-screw Trichopil (*Tr. tortilis*), so named on account of the spiral form of the petals, a second species, from Mexico, was some years since added by Messrs. Richard and Galeotti, with narrow stem-like pseudo-bulbs, and large solitary yellow flowers, under the name of *Tr. Galeottiana*. The plant now figured forms a third; and a fourth, still unnamed, has flowered with Sir Philip Egerton.

For the opportunity of publishing a coloured plate of this, the Sweet Trichopil, we are indebted to R. S. Holford, Esq. It had also been flowered about the same time by Mrs. Lawrence and Mr. Loddiges. Its broad thin pseudo-bulbs and large

leathery leaves will distinguish it when not in flower, and have led to the confusion of it with the large-flowered Tooth-tongue, *Odontoglossum grande*. The flowers emit the most delicate odour of Hawthorn. They are, when well grown, full five inches in diameter, delicate in texture, nearly white, with a few slight stains of red on the sepals and petals, and a great convolute lip richly spotted with clear rose, which, it seems, becomes, in the bright natural climate of the species, a rich and brilliant red.

The cultivation of the plant is exactly that of Lycaste Skinneri, and similar terrestrial Orchids. This has been well described in the *Journal of the Horticultural Society*, vol. v. p. 14.

"It should be recollected that no plants can exist for any very great length of time without rest, and that rest is induced in a tropical climate by drought, in the same way as low temperature in our own country suspends vital energy: therefore Orchids must be subjected to the usual seasonable changes of rest and activity. Rest is induced by withholding moisture from their roots, and partly from the air, and this state of things may be considered to represent their winter. Spring should be imitated by gradually reviving vital energy by increase of moisture, first in the atmosphere, and afterwards in the roots or soil, accompanied by a proportionate increase of temperature: this period of their growth should be very slow. Summer must be represented by a greater increase of both heat and moisture; partial shade should also be resorted to, to bring the energy of the plant into full force. And lastly, an autumn must be created to bring about maturity, by gradually reducing the quantity of both heat and moisture, until the plants are again brought to a fit state for repose. The first and last stages should be of but short duration, and require caution, otherwise much mischief may be done to the plants.

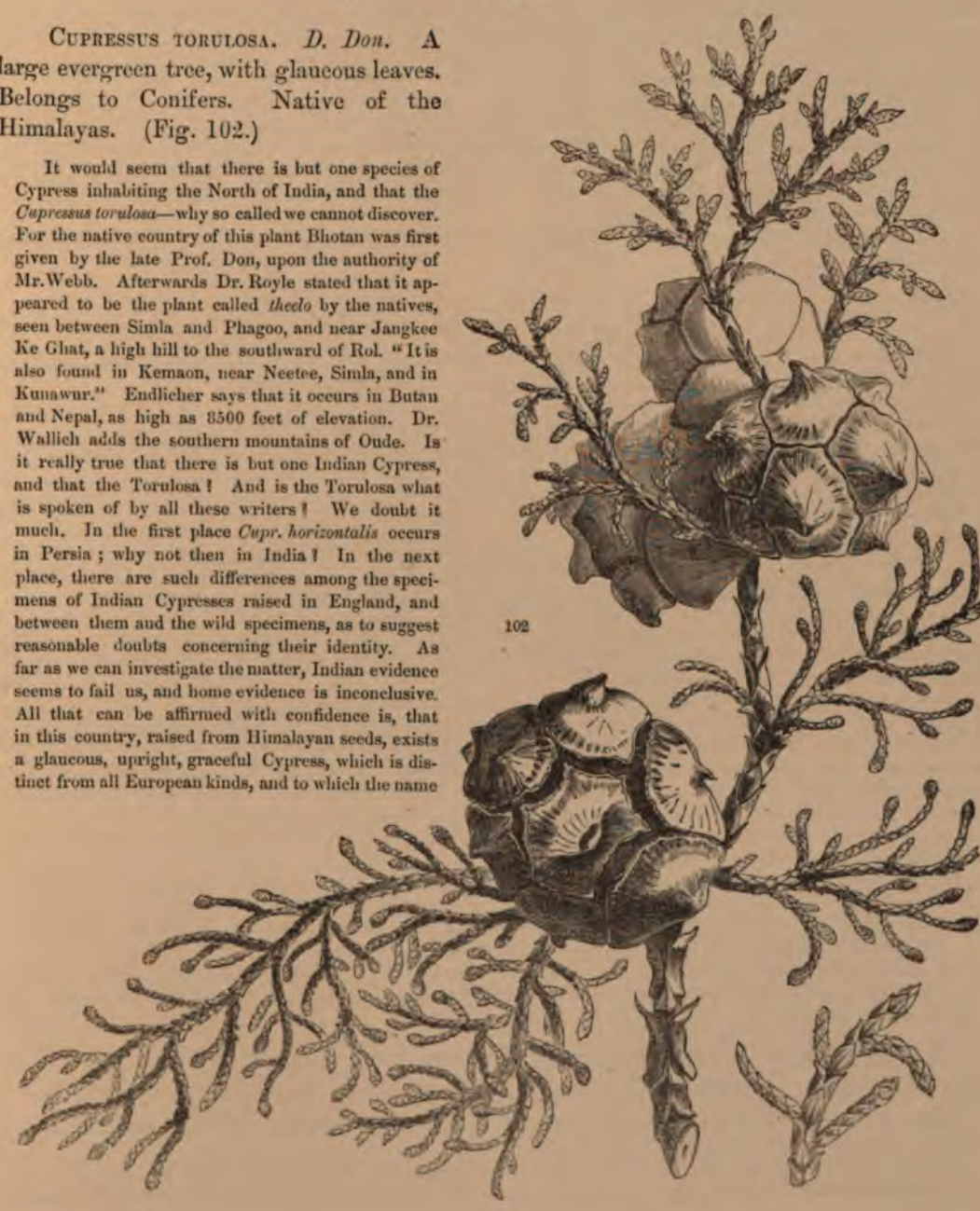
"By growing Orchids in the mean instead of the maximum of heat and moisture, they will not make such rapid growth; but they will become more robust and healthy, and be less liable to receive injury from sudden transitions, either of heat, drought, or moisture, in the atmosphere.

"The temperature of the house can only with certainty be kept regular by night, particularly in summer; therefore the fire should never raise the heat of the principal house higher than 60° and about five degrees less should be maintained where the plants are in a less excitable state: but as the days lengthen, so the temperature may rise; yet it should if possible never range higher than 75° by night in summer; it will occasionally, however, be higher in very warm weather, and should be counteracted as much as possible by evaporation and ventilation by night, and by both as well as by shading, by day."

GLEANINGS AND ORIGINAL MEMORANDA.

CUPRESSUS TORULOSA. *D. Don.* A large evergreen tree, with glaucous leaves. Belongs to Conifers. Native of the Himalayas. (Fig. 102.)

It would seem that there is but one species of Cypress inhabiting the North of India, and that the *Cupressus torulosa*—why so called we cannot discover. For the native country of this plant Bhotan was first given by the late Prof. Don, upon the authority of Mr. Webb. Afterwards Dr. Royle stated that it appeared to be the plant called *theelo* by the natives, seen between Simla and Phagoo, and near Jangkee Ke Ghat, a high hill to the southward of Rol. "It is also found in Kemaon, near Neetee, Simla, and in Kumawur." Endlicher says that it occurs in Butan and Nepal, as high as 8500 feet of elevation. Dr. Wallich adds the southern mountains of Oude. Is it really true that there is but one Indian Cypress, and that the Torulosa? And is the Torulosa what is spoken of by all these writers? We doubt it much. In the first place *Cupr. horizontalis* occurs in Persia; why not then in India? In the next place, there are such differences among the specimens of Indian Cypresses raised in England, and between them and the wild specimens, as to suggest reasonable doubts concerning their identity. As far as we can investigate the matter, Indian evidence seems to fail us, and home evidence is inconclusive. All that can be affirmed with confidence is, that in this country, raised from Himalayan seeds, exists a glaucous, upright, graceful Cypress, which is distinct from all European kinds, and to which the name



102

of *torulosa* is applied. It has a perfectly straight stem, and, when young, a compact conical growth, by which it is known at first sight. Its cones are, as usual, globular, and are made up of four pairs of hard woody scales, with a hexagonal mucronate extremity of about two more pairs. The leaves when the plant is old are blunt, in four rows, and so uniformly imbricated, that they give the young branches a regular four-sided appearance. The old wood is deep purplish brown, and perfectly smooth; whereas the branches of the Evergreen Cypress and its varieties have more or less of a cinnamon brown appearance.

Is this the one and sole Indian Cypress? Among the specimens distributed by the East India Company, we have one (named *Thuja orientalis?*)) which to the foliage of this adds cones not more than one-fourth the size, the scales being scarcely mucronate; and a second found by Blinkworth in the Himalayas, without cones, the foliage of which also corresponds with this. Are these really one and the same plant? That is what we cannot answer, at any rate without the possibility of being wrong after all.

Such difficulties render it impossible to tell with certainty what the stature and habit of our garden Torulosa may become. Endlicher says the tree is sometimes forty feet high; Don, that it is handsome and pyramidal; Griffith, who calls the Bhotan plant *C. pendula*, that it is eighty feet high, and extremely handsome (*elegantissima*); the last traveller also represents the Bhotan Cypress as a tall tree running to a sharp point, like a Spruce fir, with gracefully drooping branches. (See his Private Journals, p. 272, where is a figure of it as it was seen in the village of Chindupjie, a place more than 7,800 feet above the sea.)

The accompanying figure was taken from specimens produced in the garden of the Hon. W. F. Strangways, at Abbotsbury.

Bertolonia maculata. (*Martius.*) (See p. 19, Fig. 14.)

Upon the *Eriocnema marmoratum*, given above upon the authority of M. Naudin, who has specially studied the *Melastomads*, Sir W. Hooker makes the following observations, "Botanical Magazine," t. 4551:—

"But the plant is no *Eriocnema*. It belongs to the curious and beautiful genus *Bertolonia*,—'dont le caractère essentiel consiste,' as M. Naudin has himself well expressed, 'dans la forme tout-à-fait insolite du calyce et de la capsule;' and it is equally certain that it is the *B. maculata* of De Candolle and of Martius above quoted, t. 257. This fruit or capsule is an elegant object, especially when the eye is aided by a small power of the microscope; for it is singularly inflated, with three very prominent angles and several ribs, and every rib, as well as the margin of the lobes of the calyx, is beset with bristles, terminated by a gland."

Burlingtonia pubescens. A beautiful stove Orchideous Epiphyte, from Pernambuco. Flowers white. Introduced by John Knowles, Esq., of Manchester.

B. pubescens; acaulis, foliis coriaceis apice carinatis mucronatis, racemis densissimis pendulis, labello obovato bilobo breviter hastato laciniis erectis, cristæ lamellis utrinque 3 valde inæqualibus, columnæ basi pubescentis alis 2 minutis subulatis albis 2 oblongo-linearibus porrectis.

This beautiful novelty was exhibited at a meeting of the Horticultural Society some years ago, when it received a silver medal. It formed a wide tuft of dark green rigid leaves, pouring forth from their bosom a profusion of bunches of snow-white blossoms. It had been sent to John Knowles, Esq., of Manchester, from some friends in Pernambuco, where it appears to be very rare. It is not now, however, introduced for the first time, for we have in our possession a dried specimen, communicated by the late Mr. George Loddiges, in November, 1846, at which time we named it *pubescens*, in allusion to the down on the column, which is not found in the other drooping white-flowered species. Of these species five are now known, of which two, *B. granadensis* and *fragrans*, have the bunches of flowers erect. The other three, *pubescens*, *candida*, and *venusta* are thus distinguished:—

B. pubescens has a downy column, a lip with three yellow ridges on each side near the base, and a pair of erect side lobes, rendering it what is technically called hastate. Its flowers are the smallest of the three.

B. venusta has a smooth column, a lip in no degree hastate, with many shallow ridges on each side near the base. Its flowers are larger than in the last, and the flowers more loosely arranged.

B. candida has a smooth column, a lip very slightly hastate, with a stalk two-thirds as long as the column, and only one ridge on each side, forming a broken row of callosities. The flowers are much fewer in each bunch, but twice as large as in the last.

Franciscea eximia. *Scheidweiler.* A handsome stove shrub from Brazil, with large deep violet flowers. Belongs to the Linariads. Introduced by M. de Jonghe, of Brussels.

Habit of *Fr. latifolia*. Branches downy. Leaves oblong-lanceolate, not shining. Flowers terminal, about two together, very deep purple, two and a half inches across the limb.

In Belgium this *Franciscea eximia* is spoken of as the finest species of the genus yet in cultivation; and we learn also that it proves to be a free flowerer, plants of the height of two feet and a half producing successively through the blooming

season upwards of two hundred blossoms, of the size and colour represented in our plate. The first blossoms borne in Europe were produced in March, 1849; and the original plant again commenced flowering in January, 1850, and continued to produce blossoms till the end of June. Young plants are also reported to flower freely.—*Gardener's Magazine of Botany*, ii., p. 177.

VERBENA TRIFIDI. *Kunth.* A sweet-scented perennial, with white flowers, from the temperate parts of America. Blossoms in the autumn. Introduced from Santa Martha by His Grace Hugh Duke of Northumberland. (Fig. 103.)

A dwarf herbaceous plant, growing about a foot high, with the habit of *V. tuberosa;* covered all over with short hairs, which give a grey tint to the deep green surface. The stems are four-cornered. The leaves are stalkless, opposite, rather curved downwards, nearly three-lobed or five-lobed, in consequence of the middle lobes having two lateral divisions. From the axils of the principal leaves several smaller regularly three-lobed ones also arise, producing the condition which botanists call fasciculated. The flowers are pure white, extremely sweet, in oblong hairy simple or compound heads. The lobes of the calyx are awl-shaped, those of the corolla are oblong, nearly equal, and blunt or retuse. The species is found wild both in Mexico and New Granada, but can hardly be called a shrub, as it is stated to be by M. Schauer. It possesses little beauty, but its fragrance is delicious, and it seems destined to aid in founding a family of sweet-scented brilliant bedding plants; for there is no reason to suppose that it will refuse to cross with the gay varieties now such universal favourites.



103

LYSIONOTUS SERRATA. Amongst the many handsome Gesnerads known to gardens, this appears to be little known. It does not possess the brilliant colour of *Gesnera Cooperii*, *G. Donckelaarii*, and others of the higher coloured species and varieties, but nevertheless it is a desirable plant. It seems to succeed well at Kew with sub-tropical treatment; the roots require to be dry in the winter, but must not be kept too cold, or in a damp place, or they will be liable to perish. From the Himalaya and Khasia mountains.

Stems one to two feet high. Leaves four to ten inches long, opposite and whorled, elliptic or oblong-lanceolate; petiole half to one inch long. Flowers in drooping long-peduncled axillary corymbs. Calyx one-quarter to half an inch long, five-partite; segments lanceolate, spreading. Corolla one and a half inches long, hairy, funnel-shaped, pale lilac or blue with darker blue veins. Capsules three to four inches long, very slender; valves membranous.—*Botanical Magazine*, 6538.

ONCIDIUM PLANILABRE. *Lindley.* A hothouse Orchid from Brazil, with yellow and brown flowers. Introduced by the Horticultural Society. Flowers in August.

O. planilabre (Plurituberculata); pseudobulbis ancipitibus tenuibus costatis, foliis ensatis recurvantibus racemo brevioribus, racemo simplici, sepalis petalisq. lanceolatis unguiculatis undulatis subæqualibus, labelli laciniis lateralibus oblongis parvis intermediâ semicirculari planâ emarginata, cristâ rhomboideâ cuspidatâ margine erosâ verrucis 2 inæqualibus utrinque versus cuspidem, dente forti obtuso faciei columnæ adnato, columnæ brevibus carnosis inflexis.

This plant has the foliage of *O. flexuosum*, and flowers much like those of *O. Suttoni*. The pseudo-bulbs are thin, sharp edged, and ribbed at the side. The leaves are sword-shaped, lorate, recurved, and shorter than the raceme. The raceme is long and narrow like that of the Sutton Oncid (*O. Suttoni*), and the flowers are as nearly as possible of the same colour; that is to say, the sepals and petals are dull brown tipped with yellow, and the lip is clear yellow stained with cinnamon brown at the base. The sepals and petals are nearly of the same size and form, rhomboid-lanceolate, acuminate, wavy, very distinctly stalked. The lip is three-lobed, with the side lobes nearly as wide as that in the centre, which is slightly stalked, nearly hemispherical, emarginate, and perfectly flat. The crest consists of a broad lozenge-shaped rugged-edged cuspidate process, beneath which, near the point, on either side, are two small unequal tubercles; in addition to which there is a stout blunt tooth which rises in front of the column, forming part of it. The wings of the column are roundish, dwarf, and incurved. There is no published Brazilian species with which this can be usefully compared. From the Sutton Oncid and similar Mexican forms it differs in the form of the crest, and especially in the strong tooth already mentioned as standing in front of the column. It is rather a pretty species, of the third class in point of personal appearance.—*Journal of Hort. Soc.*, vol. vi.

DAPHNE HOUTTEANA. (*alias* Daphne Mezereum, foliis atropurpureis *of Gardens.*) A hardy evergreen bush, with vernal purple flowers. Belongs to Daphnads. Origin unknown.

That this plant is not a Mezereum is evident; in Mezereum the flowers precede the leaves; but here they appear simultaneously. In Mezereum the leaves are obovate-lanceolate, gradually extended into a wedge-shaped base, thin, glaucous beneath, downy in the bud, fringed at the edges when full grown; in this plant the leaves are lanceolate, taper-pointed, half leathery, with no trace of glaucousness or down. The flowers of Mezereum are bright carmine, and seem to come out of the very wood of the stem; those of the present plant are violet-lilac, and grow in little stalked cymes, the ramifications of which remain behind after the fruit has fallen. Is this, then, a new species? It is scarcely probable. M. Planchon suggests that it may be the *D. papyracea* of Wallich, a Himalayan species, introduced many years since into England, according to Sweet's "Hortus Britannicus;" and of which the short diagnosis in Walpers agrees pretty well with our plant. This can be ascertained by those who have access to the figure of that species, published by M. Decaisne, in the botanical part of "Jacquemont's Voyage." Be that as it may, this plant is well worth growing, for it is perfectly hardy, and flowers in March, rather later than D. Mezereum.—*Flore des Serres*, t. 592.

This is a handsome evergreen, with deep purple leaves, occasionally met with in English gardens. Can it be a mule, between the Mezereum and the Spurge Laurel (*D. Laureola*?)

VANDA TERES AUROREA. A beautiful variety which flowered with Mr. Bull, of Chelsea, during the summer of 1881. It will require similar treatment to the original species, which does better with less heat than the warmest section of Orchids are usually subjected to, with all the light consistent with the requisite shade from the sun's direct rays; admitting more air in the daytime during the growing season than many cultivators give; keeping quite dry and comparatively cool through the period of rest. Blooms of the subject under notice were sent to Professor Reichenbach, who describes it as follows—

A lovely variety. Flower snow-white, with a light rose hue on the anterior part of the lip, and some light yellow in the throat.—*Gardener's Chronicle*, N.S., vol. xv., p. 688.

NYMPHÆA TUBEROSA. So far as appearance in the flowers and leaves, this species is not very different from *N. alba* or *N. odorata*, but it differs much from them by the tubers which are formed at the root, a natural provision for its increase, as when fully grown they become detached, and afterwards form separate plants. A native of the North-Eastern American States.

Rootstock creeping, bearing oblong tubers singly or in clusters along its length. Leaves large, circular, eight to eighteen inches in diameter, sometimes retuse with contracted sides, margin entire or undulate. Flowers four to seven inches in diameter, slightly odorous when first opened, smelling of Apples or Vanilla. Sepals and petals as in *N. alba* and *odorata*. Antners long, the outer with cuspidate tips. Seeds with a usually incomplete aril, rarely with none or a complete one.—*Botanical Magazine*, 6533.

SOLANDRA LÆVIS. *Hooker*. A fine stove shrub, with very large pale green flowers. Belongs to Nightshades. Native of Guatemala. (Fig. 104.)



104

That this is the plant figured in the *Botanical Magazine*, t. 4345, we entertain no doubt, although its flowers are seven instead of ten inches long, green instead of white, and its calyx is not at all ribbed; for it was drawn from a specimen gathered from a plant received by the Horticultural Society from the same nurserymen as sent it to Kew. It is also, beyond all doubt, the *Solandra grandiflora* of Mr. Bentham's Plantæ Hartwegianæ, No. 606, collected on the mountains of Quezaltenango on the Pacific side, and near Acatenango, differing from that species in its ventricose tube, much longer than the short limb and its included stamens. It is a true Solandra, according to the definition of Mr. Miers in his admirable papers on Solanoid plants. Its nearest relation is *Solandra guttata*, which has buff flowers, with a spotted throat and downy leaves.

A very fine stove plant, cultivated with the greatest ease, and flowering abundantly in the months of Autumn.

PRIMULA CAPITATA. *Hooker.* A hardy herbaceous plant, with close round heads of deep purple blossoms. Native of the Himalayas. Introduced to Kew. Flowers in October.

Raised at the Royal Gardens of Kew, from seeds sent by Dr. Hooker, which were gathered in June, 1849, from plants growing on gravelly banks at Lachen, Sikkim-Himalaya, one of the Passes into Thibet; elevation 10,000 feet above the level of the sea. It is, although of the same group of *Primulæ* with the *P. denticulata* of the Nepal mountains and our own *P. farinosa* of the north of England and Scotland,—a remarkable and well-defined species, the flowers being actually sessile, and so crowded as to form a compact globose head, like that of many species of *Allium* or *Armeria*. Dr. Hooker observed that it yields a faint fragrance, which it does in cultivation; but this, in part at least, is derived from the farinaceous substance of the leaves and flowers. It flowers with us in a pot in the rock-border. Scape often a foot long, moderately stout and thickened upwards, mealy, terminated by a dense globose head of flowers, bracteated at the base, the outer bracteas lanceolate, and forming a small reflexed involucre. Calyx sessile, mealy, large, campanulate, deeply five-fid, the segments ovate, acuminate, subpatent. Corolla with the tube nearly twice as long as the calyx, almost white, mealy, a little inflated upwards, and transversely wrinkled; limb of five, obcordate, spreading lobes, deep purple above, pale beneath. In habit this approaches our native species, *P. farinosa* and *P. Scotica;* and although it is a native of a high region, and consequently subjected to a great degree of cold, yet, like other Alpine species of the genus, it will probably require some slight protection in this climate, especially under our artificial mode of cultivation.



PHALÆNOPSIS EQUESTRIS (ROSEA) LEUCAPSIS. This pretty Phalænopsis appears to have been bloomed by Mr. G. T. Barber, Old Hall, Spondon, Derby, from whom Professor Reichenbach received flowers, and thus describes it—

A very distinct variety, having a white callus with brown dots, but no brown on the base of the lip.—*Gardeners' Chronicle*, N.S., vol. xv., p. 688.

CALCEOLARIA CUNEIFORMIS. *Ruiz and Pavon.* A greenhouse shrub, with pale lemon-coloured flowers, from Bolivia. Blossoms during all the autumn and winter. Introduced by the Horticultural Society. (Fig. 105.)

Raised from seeds purchased from Mr. Thomas Bridges, in 1846. This, in its wild state, is a stiff, short-branched bush, with small wedge-shaped leaves, covered with white hairs on the under side. It bears two or three flowers at the end of each branch, which is closely covered with short, rough hairs. In its cultivated state it has much larger and softer leaves, and weaker branches. The flowers are about as large as those of *C. integrifolia*, and of a pale lemon-colour. It is a very pretty greenhouse plant, with a better habit than the old shrubby Calceolarias. *Journal of Hort. Soc.*, iii. p 242.

CORDYLINE SIEBOLDII. *Planchon.* (*alias* Dracæna javanica *Kunth; alias* Sanseviera javanica *Blume.*) A stove shrub, with small panicles of pale green flowers, and rich spotted leaves. Belongs to Lilyworts. Native of Java. Flowered by Mr. Van Houtte.

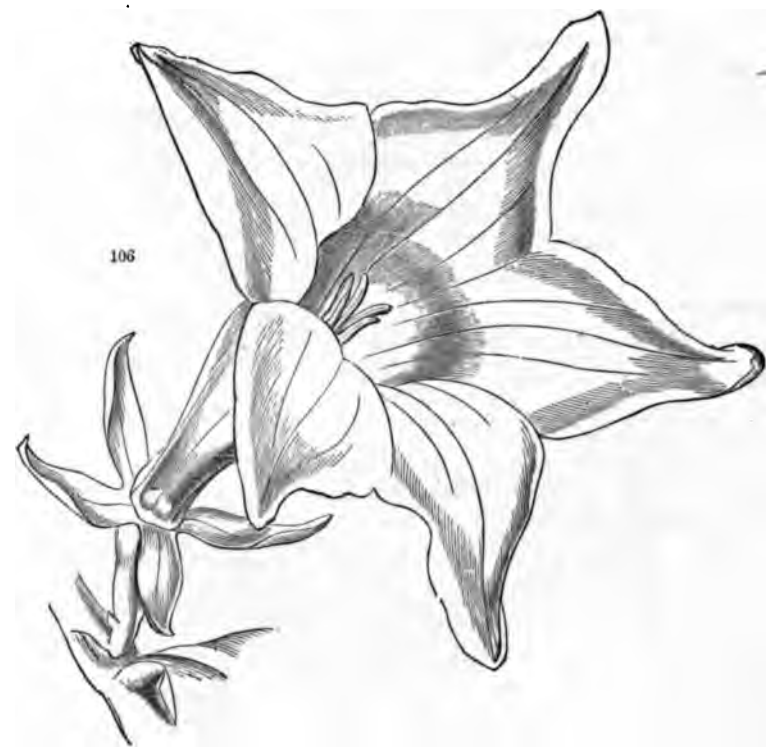
This plant has been recently introduced from Java, by Dr. von Siebold. The leaves are of a very dark green colour, firm, convex, recurved, and beautifully variegated with pale green roundish blotches. The flowers are something like those of a Hyacinth in form, but are much smaller, and in terminal bunches. It gained a prize at the Exhibition of Flowers

by the Horticultural Society of Ghent. The species is very handsome, and would look well among a collection of Orchids, the climate of which is precisely what it wants.—*Flore des Serres*, t. 569.

M. Planchon, in the article from which this extract is taken, and some others, treats at length of the plants ucually combined under the name of Dracæna. He forms the new genus DRACÆNOPSIS upon *Dracæna australis* of Hooker; points out *D. ferrea* of Linnæus, or *D. terminalis* of Jacquin, as the type of another which he afterwards names CALODRACON; and he adopts the genus CHARLWOODIA.

PORTLANDIA PLATANTHA. *Hooker.* A handsome white-flowered hothouse shrub of unknown origin. Belongs to the Cinchonads. Blossoms in July. (Fig. 106.)

Messrs. Lucombe and Co. received, and have cultivated this in the stove, under the name of "*Portlandia grandiflora*, fine variety;" but they remark, that both in its foliage and in the flowers it differs considerably from that species. "It flowers," say these nurserymen, "in a very dwarf state, and is almost always in blossom," an observation confirmed by the continual flowering, during the summer of 1849, of a small plant not more than a foot and a half high, which they sent to the Royal Gardens, and from which a figure was taken in July, 1850. A shrub, a foot and a half high, erect, branched, smooth. Leaves opposite, nearly sessile, elliptical-obovate, acute, evergreen, leathery, full glossy green, entire. Stipules broadly triangular, obtuse. Pedicels very short, axillary, solitary, often opposite. Ovary long 4-angled, 2-celled; cells with many ovules. Limb of the calyx of four spreading, leafy, lanceolate lobes. Corolla white, not more than half the length of that of *P. grandiflora*, broadly funnel-shaped, approaching to bell-shaped, 5-ribbed. Limb of five spreading ovate lobes, their margins revolute. Filaments downy in their lower half. A tropical shrub with fine glossy leaves and showy white flowers, worthy of a place in every collection of woody stove-plants. It grows freely in a mixture of loam and leaf-mould or peat soil. It must be kept in a moist tropical stove, the necessary precautions of watering and shading during clear summer sunshine being carefully attended to. It is propagated by cuttings placed under a bell-glass, and plunged in moist bottom-heat.—*Bot. Mag.*, t. 4534.



FORTUNE'S DOUBLE YELLOW ROSE. A deciduous half-hardy scrambling plant, with buff semi-double flowers. Found cultivated in China. Introduced by the Horticultural Society.

This is a straggling plant, with the habit of *R. arvensis*, but with handsomer though deciduous leaves. The branches are dull green, strongly defended by numerous short hooked prickles, without setæ. The leaves are smooth, in about three pairs, bright shining green above, rather glaucous beneath. The flowers are as large as those of the Common China Rose, semi-double, solitary, dull buff, tinged with purple. The petals are loose, and the whole aspect of the flower that of a slightly domesticated wilding. The bush looks like a cross between the China Rose and some scrambling species, such as our European *R. arvensis*. That species being however unknown in Asia, the plant before us must have had some other origin, concerning which it is fruitless to inquire. In its present state this variety has little claim to English notice; but it may be a good breeder, and would certainly be much handsomer in a warmer climate than ours.

Mr. Fortune continues to speak highly of its beauty in China, where it is said to be loaded with buff blossoms; in England, however, its wood is easily killed by frost, and it cannot be regarded as being hardier than a Tea Rose.—*Journal of Hort. Soc.*, vol. vi.

STATICE TATARICA. Now, when the best kinds of hardy herbaceous plants are regaining a position which they never should have lost, such pretty species as this cannot fail to become popular. Its slender branching flower-stems, thickly studded with small red flowers, are most effective. It is found indigenous in a wide range of country from Dalmatia to Siberia, consequently is quite hardy, requiring nothing more than the ordinary cultivation that suffices for herbaceous subjects generally. The plant has been long in the country, but is so little known that we think it well to draw attention to it.

Root woody, perennial. Leaves tufted, four to six inches long, oblong, spathulate or oblanceolate, narrowed into the petiole. Scape short, stiff, erect, two to three inches long, with slender triquetrous branches, which again bear simple or branched distichous recurved spikes one-half to one and a half inches long. Spikelets subunilateral on the branches, distant, one to three flowered. Flowers one-sixth of an inch long. Calyx funnel-shaped, plicate; lobes short, oblong, obtuse, erect. Petals connate at the base; claws long, contiguous; limb bright ruby-red, notched. Styles filiform; stigmas capitate.—*Botanical Magazine*, 6537.

BRASSIA SIGNATA. *H. G. Reichenbach, f.* The Brassias are not held in much account by those who value Orchids alone for their rarity and gorgeous colours; but by those who appreciate elegance in form—which especially befits them for associating with other flowers—and the additional property of standing for an unusual length of time when cut, their merits are duly acknowledged. The subject of our notice was imported by Messrs. Backhouse, of York, who have brought so many fine plants into the country.

Sepals and petals olive-green when first open, soon turning yellow. There are three brown lines at the base of the petals, and a single one at the base of the sepals. Lip white, with two or four purple spots in the centre, two orange spots on the base of the keels, yellow in the disc underneath. Outline pandurate, with a long abrupt point. The two keels run parallel, having one blunt tumour at the base, and a larger one in front.—*Gardener's Chronicle*, N.S., vol. xvi., p. 6.

ZEPHYRANTHES MACROSIPHON. *J. G. Baker.* A handsome addition to the smaller growing section of bulbous plants, introduced by Messrs. Veitch. It possesses flowers equal in size to the largest of the species. These Zephyranthes constitute a small and select division of the great Amaryllidaceous family, and are deserving of much more extended cultivation than they receive, occupying as they do very little room; an eight-inch pot is sufficient for eight or ten bulbs. Similar to many other bulbs, they do not like to be often disturbed at the roots; consequently, except with a view to re-adjust the drainage material, or when they have increased so as to require more room, it is better not to re-pot them often. Good loam with a little sand added answers well for them; in potting make the soil quite firm, just covering the crowns of the bulbs. Most of the other species in cultivation succeed with greenhouse treatment, and very likely such will answer for the plant under notice, which comes from Mexico.

Bulb ovoid. Leaves three to four, contemporary with the flowers or a little later, linear, one foot long when fully developed, quarter of an inch broad, bright green, shallowly channelled down the fall, rather fleshy in texture. Scape terete, about as long as the leaves. Spathe two-valved, one and a half inches long, tubular in the lower half. Pedicel about one inch long. Perianth funnel-shaped, bright rose-red, two and a quarter to two and a half inches long, the obovate obtuse permanently suberect segments as long as the tube, above half an inch broad. Filaments inserted at the throat of the perianth tube; anthers linear, half an inch long, falling short of the tip of the perianth-segments; pollen bright yellow. Style reaching to the base of the anthers, its stigmatic lobes spreading, suborbicular.—*Gardener's Chronicle*, N.S., vol. xvi., p. 70.



THE COPIOUS FLOWERED CRAB
(PYRUS (MALUS) FLORIBUNDA.)



[PLATE 33.]

THE COPIOUS FLOWERED CRAB.

(PYRUS [MALUS] FLORIBUNDA.)

A Hardy Flowering Tree, from CHINA *and* JAPAN, *belonging to the Natural Order* POMACEÆ.

Specific Character.

PYRUS (MALUS) FLORIBUNDA.—A small tree, perfectly hardy, and bearing in early spring a profusion of lovely rose-pink flowers, each about an inch and a quarter across, which become paler as they expand. The branches are long, slender, and bend downwards; the glabrous leaves are shortly stalked, lanceolate, acute, sharply and finely saw-toothed. The flowers are borne in sessile umbels or trusses, each made up of six to eight slender, erect, flower-stalks. The flower-buds, which from their rich rose colour are particularly attractive, are about half an inch long, ovate, and pointed at both ends. The ovary is oval, surmounted by five short linear lanceolate sepals; the petals oblong obovate; the stamens very numerous, erect, whitish. The ripe fruit is globose, of the size of a large pea, but not edible.

M. T. Masters.

THIS is one of the most beautiful of all flowering trees, and, although it has been in the country for some years, is so seldom met with in gardens that its existence would not seem to be so well known as it deserves to be. It is a native of China and Japan, the countries which have done so much to embellish our gardens with quantities of flowering trees, shrubs, and other plants, many of which adapt themselves to our climate quite as well as those that are indigenous to the kingdom. Its flowers are alike beautiful in their different stages of development, before opening the long, pliant, drooping shoots, densely clothed their entire length with the large crimson-red buds, are equally as effective as are the pale pink fully expanded flowers which it produces in such profusion as to form complete wreaths a foot and a half to two feet long. It grows to the size of a small dwarf tree, the branches of a weak willow-like character, pendent in habit; and it seems to resist our severest winters equally as well as the common English Crab. Several examples of it that we planted just before the severe frost set in at the close of 1880 have stood in exposed situations completely uninjured, and bloomed in the following spring as if they had not been moved. This Pyrus seems to be at home in any description of soil that will grow ordinary

deciduous trees and shrubs. It looks the best in the form of a standard, on a straight stem some five feet in height, which allows its drooping shoots to be seen to advantage. This, and others of the Pyrus family, might with advantage be much more freely used in pleasure-grounds than they are, especially in company with evergreens, the somewhat sombre appearance of which they relieve.

There are several other kinds of these Crabs, well deserving of being more planted in shrubberies than they have hitherto been. Amongst them may be named the following :—

PYRUS (MALUS) MALANOCARPA. (The Black Crab.) This grows to a medium size; the flowers—white—are produced freely. It is also conspicuous for its very dark coloured fruit, almost black.

P. (MALUS) CORONARIA. (The Sweet-scented Crab.) Is of medium growth; its flowers are pale red, produced freely, and are very sweet. It comes from Virginia.

P. (MALUS) SPECTABILIS. (The Chinese Crab.) A beautiful species that blooms in April or May, the flowers being produced in the greatest profusion; they are dark red in the bud state, pink or rose colour when open. A native of China.

P. (MALUS) BACCATA. (The Berry-fruited Crab.) This is a small grower, blooming in April or May; the flowers are pink; its small fruit is very ornamental. It comes from Siberia.

P. (MALUS) ANGUSTIFOLIA. (The Narrow-leaved Crab.) Is of comparatively dwarf habit, and blooms later than the others, opening its flowers in May and June. The flowers are red when in bud, and pale pink when expanded. It also is sweet-scented. It is sub-evergreen, and comes from Carolina.



[PLATE 34.]

WALKER'S CATTLEYA.

(CATTLEYA WALKERIANA.)

A Stove Epiphyte, from BRAZIL, *belonging to the Natural Order of* ORCHIDS.

Specific Character.

WALKER'S CATTLEYA.—Stems oval, stalked, each having one leaf. Leaves oblong, thick, concave. Flower-stalks 1-2-flowered, with a small spathe-like bract. Petals oval, wavy, membranous, twice as wide as the sepals. Lip smooth, naked, with short lateral roundish lobes, and the middle lobe rounded and two-lobed. Column broad, thick, rounded off at the upper end.

Cattleya Walkeriana, *Gardner, in the London Journal of Botany*, vol. ii., p. 662: *alias* C. bulbosa, *Bot. Register*, 1847, t. 42.

FOR the opportunity of figuring this beautiful flower in really fine condition we are indebted to C. B. Warner, Esq., in whose collection, at Hoddesdon, blossomed the specimen which we have represented. In the *Botanical Register* a small specimen was published some years since, from Mr. Rucker's garden, under the name of *Cattleya bulbosa*, its identity with what the late Mr. Gardner had previously called Walker's Cattleya not having been suspected. Mr. Rucker's plant had, however, a much more richly-coloured lip than this, and must have been a distinct variety.

According to Gardner it inhabits the country beyond the diamond district of Brazil, where it was found by Mr. Elward Walker, his assistant, on the stem of a tree overhanging a small stream which falls into the Rio San Francisco.

The stems are club-shaped and furrowed, each having one leathery, concave, blunt leaf, which is by no means wider at the base than apex; when young or ill-grown they are short and oblong, in which state they gave rise to the name *C. bulbosa*, now cancelled. The flowers grow singly, or in pairs, from within a short, narrow, reddish spathe, and are full five inches in diameter, fragrant and bright, but not deep, rose colour. The sepals are oblong, acute, and membranous. The petals are broad, oblong, acute, slightly wavy, but not lobed. The lip, which is a richer rose than the other parts, is small, roundish at the end, and emarginate, with two narrow, erect, lateral lobes, which fold over the lower part only of the column. The column itself is very broad, fleshy, rounded, with no lobes or notches such as are found in *C. pumila*.

Perhaps the nearest relation of this plant is with *C. superba*, from which, however, its dwarf habit and incomplete lip readily distinguish it.

All known species of this beautiful genus are so highly deserving cultivation that an enumeration of those which are at present grown seems desirable, especially since the list published some years since in the *Botanical Register*, now requires many important additions. The arrangement there proposed seems, however, to answer all the purposes of the cultivator as well as of the botanist, and is therefore followed in the following catalogue:—

CATTLEYA.

SECTION I.—*Lip rolled round the Column.*

SECTION II.—*Lip flat, not rolled round the Column, and without lateral lobes.*

SECTION I.

* Sepals of the same texture as the Petals, the lateral ones being nearly straight.

1. C. superba, *Lindl. Sertum Orchid.*, t. 22; alias *C. Schomburgkii*, Lodd. Cat., alias *Cymbidium violaceum*, Humboldt and Kunth.—Demerara.—Flowers deep rose-coloured, fragrant, with a deep crimson lip.
2. C. elegans, *Morren, Annales de Gand*, t. 185.—St. Catharine's, in Brazil.—Flowers large, rose-coloured, with a deep purple-violet lip. Very like *C. superba*, except in colour, but the leaves are represented as being much narrower, and the lip is said not to have either wrinkled veins or callosities. Unknown to us except from Professor Morren's figure made from a Belgian specimen in the possession of M. Alexander Verschaffelt.
3. C. Skinneri, *Bateman, Orch. Mex. et Guatemal.*, t. 13.—Guatemala.—Flowers deep rich rose colour, with a crimson lip.
4. C. Walkeriana, *Gardner, in Lond. Journ. Bot.*, vol. ii. p. 662; alias *C. bulbosa*, *Lindl. in Bot. Register*, 1847, t. 42.—Brazil.—Sweet-scented, dwarf, with large rose-coloured flowers.
5. C. pumila, *Hooker, in Bot. Mag.*, t. 3656; *Bot. Reg.*, 1844, t. 5: alias *C. marginata*, alias *C. Pinellii* of Gardens.—Brazil.—A dwarf species with a lobed column, deep rose-coloured flowers, and a rich crimson crisp lip, often edged with white. In *C. Pinellii*, the flowers are much paler.
6. C. maxima, *Lindl. Gen. et Sp. Orch.*, No. 4; *Bot. Reg.*, 1846, t. 1.—Guayaquil and Colombia.—Flowers bright rose, with convex petals, and a lip richly variegated with dark crimson veins traced upon a pallid ground.
7. C. labiata, *Lindl. Collect Bot.*, t. 33; *Bot. Reg.*, t. 1859; *Bot. Mag.*, t. 3988: alias *C. Mossiæ*, *Bot. Mag*, t. 3669; *Bot. Reg.* 1840, t. 58.—Tropical America.——The two forms to which the above names have been applied, differ in little except colour. In *C. labiata*, the lip is stained with one deep uniform tint of crimson; in *C. Mossiæ*, it is richly variegated with crimson veins upon a yellowish ground. The first is from swamps in Brazil, the latter is from the Caraccas, where it grows at an elevation of three thousand feet above the sea, sporting into many charming modifications of colour.

   There is a *C. quadricolor* in the possession of Mr. Rucker, with which we are not sufficiently acquainted to say how it differs from the last.
8. C. Lemoniana, *Lindl. in Bot. Reg.*, 1846, t. 35.—Brazil.—Flowers pale pink, whole coloured.
9. C. lobata.—Brazil.—Flowers deep rich rose, whole coloured. Of this species, in the possession of Mr. Loddiges, we shall probably take an early opportunity of giving some account.
10. C. crispa, *Lindl. in Bot. Reg.*, t. 1172; *Bot. Mag.*, t. 3910.—Brazil.—Flowers white, crisp, with a rich crimson stain in the middle of the lip.
11. C. citrina, *Lindl. Gen. et Sp. Orch.*, No. 8; *Bot. Mag.*, t. 3742: alias *C. Karwinskii*, Martius Choix, p. 15, t. 10.—Mexico.—Flowers bright yellow.

** Sepals somewhat herbaceous, or more coriaceous than the Petals, the lateral Sepals manifestly falcate.

12. C. Loddigesii, *Lindl. Collect. Bot.*, t. 37; alias *C. intermedia*, Graham, in Bot. Mag., t. 2851; alias *C. vestalis*, Hoffmansegg. Bot. Zeitung, 1. 831; alias *C. Papeiansiana*, Morren, Ann. Gand, p. 57; alias *C. candida* of gardens.—Brazil, in marshes.—The original, *C. Loddigesii*, has pale purple flowers; in *C. intermedia* or *candida*, they are nearly white.
13. C. Harrisoniana, *Bateman, in Bot. Reg.*, sub t. 1919.—Brazil.—Flowers lilac, the lip with a deep blotch.
14. C. maritima, *Lindl. in Bot. Reg.*, sub t. 1919.—Brazil.—Unknown in gardens; probably not distinct from *C. Loddigesii*.
15. C. Arembergii, *Scheidweiler, in Garten-Zeitung*, 1843, p. 109.—Brazil.—Unknown to English botanists. Flowers large, lilac, sweet-scented.
16. C. Forbesii, *Lindl. Bot. Reg.*, t. 953.—Brazil.—Flowers greenish yellow.
17. C. guttata, *Lindl. Bot. Reg.*, t. 1406; alias *C. elatior*,

Lindl. Orch., No. 9; alias *C. sphenophora*, Morren, in *Ann. Gand*, t. 175.—Brazil.—Flowers greenish yellow, beautifully spotted with crimson.

18. C. granulosa, *Lindl. in Bot. Reg.*, 1842, t. 1; and 1845, t. 59.—Brazil, Paräiba.—Flowers large, olive-coloured, with a long white and yellow or crimson lip. Not from Guatemala, as at first reported; an error corrected by Mr. Hanbury.

SECTION II.

19. C. Aclandiæ, *Lindl. in Bot. Reg.*, 1840, t. 48.—Brazil.—A magnificent little plant, with large chocolate flowers variegated with yellow, and a rich rose-coloured lip.

20. C. bicolor, *Lindl. in Bot. Reg.*, sub t. 1919.—Brazil.—Flowers tawny, with a bright purple labellum. Sometimes has eight or ten flowers in a raceme.

The Cattleya (?) domingensis *of the Genera and Species of Orchidaceous Plants* is a Lælia, and perhaps the same as *L. Lindenii*, a charming plant from Cuba, which we saw in the fine collection of Orchids formed by M. Pescatore, at his beautiful seat at Celle St. Cloud, near Paris.

The manner in which the specimen now represented was cultivated has been thus described by Mr. Warner's gardener, B. S. Williams, who is one of our best growers of Orchids :—

"This fine species of Cattleya blooms twice a year, (February and June,) on the young growth; its blossoms last five or six weeks in perfection, which is a much longer time than any of the other Cattleyas; they seldom flower longer than three or four weeks at a time; it is also very sweet-scented and will perfume a whole house. It succeeds best on a block of wood surrounded by a little Sphagnum, and it should have a good supply of heat and moisture in the growing season, but after it has made its growth it should be kept rather dry and may be placed in a much cooler house, say about 60°; it should only have just sufficient water to keep the bulbs from shriveling too much. The plant should be fastened to the block with copper wire and suspended from the roof in a place where there is plenty of light, but not too much sun.

"No doubt exists that Cattleyas rank among our finest Orchids. Their flowers are large and beautiful. In their native countries adhering as they do to the projecting arms of living trees or the prostrate trunks of dead ones, they flourish and are dormant alternately with the seasons; at times they are subject to the saturating effects of long continued rains, and again they are dried up by months of warm weather. Almost all Orchid growers cultivate their Cattleyas in the coolest Orchid house, but I grow them in the hottest house I have, along with the East Indian Aërides, Saccolabes, and Dendrobes. I find that they succeed much better in the hottest house, in which they make fine strong bulbs and good foliage, and always flower strongly and vigorously. It is considered that some species are difficult to bloom, such as Superba and Pumila, two of the finest of Cattleyas; but I experience no difficulty in flowering all the kinds here every year, and some of them twice a-year. Loddigesii flowers twice a-year—in July, and again in September, producing thirty and forty flowers at a time; Crispa, a beautiful species, brings forth about sixty blooms at a time; and Mossiæ, another fine thing, fourteen flowers. Labiata, one of the finest of Cattleyas, is a very free bloomer, and so is Skinneri. Loddigesii, Intermedia, Guttata, and Candida, are also all good sorts and free bloomers.

"In cultivating Cattleyas, the method I follow is to give them a good supply of heat while they are growing; but not too much water at the roots; about twice a week when they are in vigorous growth will be quite enough; for Cattleyas are not very thirsty plants, and by giving them too much water the bulbs are apt to rot. After they have made their growths they should be well rested, by keeping them rather dry. During their dormant season only just sufficient water should be given them to keep their bulbs from shriveling. I give them a good season of rest, which makes them grow more strongly and flower more freely, their blooming season being from November to the latter end of February; and during this time I keep them in a temperature of about 60° or 62° by night, and

65° by day. After the resting season is over I raise the temperature from 65° to 70° by night, and from 70° to 75° by day, and during sun-heat the temperature may be allowed to rise still more; 85° to 90° will do no injury, but air should be given to prevent the heat rising too high, and also to dry the house once a day; but do not permit cold air to circulate among the plants. The air on entering, should be warmed by being caused to pass over the hot-water pipes.

"I grow all the varieties of Cattleya in pots except Walkeriana, which, as I have stated, I grow on a block; all the kinds may be grown on blocks with moss, but I find they succeed best in pots, in fibrous peat and broken potsherds mixed together. The peat should be broken into pieces about the size of a hen's egg. The most material point to be attended to in potting is that the pots should be well drained; this may be effected by placing a small pot in the bottom of the other and filling the latter half full of potsherds, and then placing a little moss over them to prevent the superincumbent peat from getting down and stopping the drainage. If this is not attended to, the water will stagnate, the soil sodden, and the plants will become sickly, a condition from which they seldom recover. Pot about two or three inches above the rim of the pot, and use a few small pegs to keep the peat firmly round the plant. When you re-pot remove all the old soil from the roots, if it can be done without injuring them, and water the plants sparingly afterwards.

"Cattleyas are propagated by division; always choose a young bulb having a fresh bud at its base from the outside of the plant.

"They should be kept perfectly clear of insects by sponging them with clean water; they are very subject to the white scale."

GLEANINGS AND ORIGINAL MEMORANDA.

CRAWFURDIA LUTEO-VIRIDIS. A singular and very pretty climbing plant of the Gentian order; a native of the Sikkim Himalaya. Introduced to Kew, where it has flowered. The flowers are not showy, the principal beauty of the plant consisting in its bright red fruit, which are an inch long, and produced freely from the axils of the leaves, springing from the joints of the shoots. A greenhouse, or at least the protection of a frame, will be required to grow it successfully.

Stem slender, twining. Leaves petioled, one and a half to three and a half inches long, ovate, ovate-cordate, or ovate-lanceolate, bright green above, pale beneath, mottled with red as they get old. Flowers clustered in the leaf axils and terminal, one and a half inches long. Calyx with a five-angled oblong tube, rounded at the base, green. Corolla between funnel and bell shaped, tube green, limb white. Stamens inserted half-way down the tube. Ovary stipitate, slender. Fruit an inch long, bright red, fleshy. Seeds numerous.—*Botanical Magazine*, 6539.

ANGULOA MEDIA. *H. G. Reichenbach, f.* In these times of hybrid Orchid raising, when not a few of the most popular and beautiful species have contributed, by the aid of the hybridist, to the production of still greater variety, it is no wonder that the handsome Anguloas have been brought to add to the already numerous and charming crosses existent. For such the plant under notice would appear to be. Anguloas are now much better grown under the cooler treatment found to suit them, than they used to be with the over-warmth they often were subjected to. Associated with the warmer division of the cool section of Orchids, their bulbs and leaves get a size not attainable under conditions of more heat.

Sepals and petals orange yellow outside, spotted with brown inside. The side sepals have an orange line down the middle and an orange colour at the base, with brown pallid spots and lines. Lip, like *A. Clowesii*, has the very short anterior laciniæ, side laciniæ reddish brown, disk ochre-coloured. Column yellow, with numerous brown spots.—*Gardener's Chronicle*, N.S., vol. xvi., p. 38.

CRINUM FORBESIANUM. Amongst the many cultivated species of Crinum, this is one of the largest growers. It was introduced over half a century ago, but afterwards lost sight of until again received at Kew, where it flowered in 1878. In the colour of the flowers it seems to be near *C. ornatum*, which has conspicuous feathery red markings down the middle of each petal. It comes from Delagoa Bay, and will very likely succeed under the treatment of alternate growth and rest, during which latter process the soil should be kept dry.

Bulb very large. Leaves lanceolate-lorate, decumbent, three feet long, four inches broad, acute, glaucous, distinctly ciliated. Scape ancipitous, pale green. Flowers thirty or forty in a dense umbel; spathe-valves lanceolate-deltoid, three inches long. Perianth funnel-shaped; ovary oblong; tube cylindrical, three inches long;

on blooming from the beginning of May to November. Many growers fail to manage them satisfactorily; the principal cause of failure is potting them in soil that is too retentive of moisture, and giving them too much water. They succeed best in peat fibre, that is peat with the greater part of the earthy matter shaken from it; and in the matter of water require to be allowed to get much drier than most plants will bear. They do best with as much heat as any stove plant will bear.

NERINE FILIFOLIA. This is a pretty Amaryllidaceous plant of small growth, with bright red flowers, and very slender narrow leaves. It comes from the Orange Free State, and has flowered at Kew. Its appearance is distinct, and it is a desirable plant, taking up little room, and deserves a place with those who take an interest in the cultivation of bulbous plants. It blooms during the autumn months.

Bulb ovoid, under an inch in diameter. Leaves six to ten from a bulb, contemporary with the flowers, slender, grass-green, six or eight inches long. Scape a foot long, slender. Umbel eight or ten flowered; spathe-valves greenish, lanceolate, under an inch long. Perianth-limb horizontal, rose red, an inch long; segments oblanceolate, crisped, not more than a twelfth of an inch wide. Stamens declinate, about as long as the perianth; filaments bright red; anthers minute, oblong, reddish; pollen white. Style finally exceeding the stamens; stigma capitate. Capsule orbicular, deeply lobed, with two or three seeds in each cell.—*Botanical Magazine*, 6547.

CYPRIPEDIUM GUTTATUM. *Swartz.* A hardy terrestrial Orchid, with white flowers spotted with purple. Native of Northern Russia, Siberia, and North America. (Fig. 107.)



107

This charming plant is one of the most exquisitely beautiful little things imaginable. A diminutive stem, a few inches high, with a pair of broad plaited leaves, bears one solitary flower as large as a pigeon's egg, most curiously painted with rich deep purple upon a pure white ground. This plant has been occasionally received from Russia in a living state; it will be easy for those who have friends in Canada or at Moscow to procure supplies with which further experiments may be tried. We can only say that it grows in morasses and bogs.—See *Flore des Serres*, t. 573.

CŒLOGYNE TRISACCATA. *Griffith.* An Orchidaceous Epiphyte from tropical India, with large white flowers. Blossomed with Mons. Pescatore.

C. trisaccata, Griffith (*Itinerary notes*, p. 72); pseudobulbis elongatis, foliis membranaceis obovato-lanceolatis, 5-nerviis, racemis recurvantibus, bracteis latis ovatis obtusis cucullatis sterilibus carnosis floriferis minoribus membranaceis, floribus conniventi-clausis basi trisaccatis, petalis linearibus, labelli apice 3-lobi lamellis 2 carnosis flexuosis perax in laciniis subserrulatis rotundatis minutè ciliatis lateralibus rotundatis intermediâ nanâ bilobâ basi dilatatâ.

M. Luddeman states the pseudo-bulbs to be dilated at the base, much lengthened and narrowed towards the point where they are quadrangular; the leaves to be lanceolate, pointed, and 5-ribbed; the flowers to be arranged 6-8 in nodding racemes, distichous, scarcely expanding except at the point, pure white with the end of the lip sulphur-yellow. This quite agrees with the statement of Griffith, the botanist who found it at Mamloo, in woods, in the Khasijah hills.

EPIDENDRUM ANTENNIFERUM. A singular Orchid with inconspicuous long-tailed flowers. Native of Xalapa. Introduced by M. Quesnel. Flowered by M. Pescatore. (Fig. 108; *a*, diminished; *b*, magnified.)



E. antenniferum (Amphiglottium) foliis coriaceis oblongis acutis, pedunculo gracillimo apice subpaniculato, petalis longissimis filiformibus, labello ovato leviter dentato basi trituberculato.

This plant was originally found near Xalapa, by Henchman, who brought home a small dried specimen without leaves, which was given us by the late Mr. George Loddiges. Among the plants purchased of M. Quesnel by M. Pescatore, it was found alive marked as a native of Gabon, a place in the province of Rio Janeiro; but this locality is doubtful. In many other species of the genus, especially among the Amphiglots, there is that tendency to lengthen the petals, of which so striking an example was given in the long-tailed Lady's Slipper (page 59); but in no other known species does it occur in anything like the same degree as here; and it is to be observed that in this Epidendrum the lengthening is an after-growth, the petals being straight and short before the flowers expand. In the annexed cut the flower at *b* is magnified: its real size is that of *Epidendrum elongatum*.

DENDROBIUM (PEDILONUM) CURTISII. *H. G. Reichenbach, f.* A distinct and very pretty Dendrobium, which flowered with Messrs. Veitch. It is, we understand, one of Mr. Curtis's discoveries in Burmah, and is evidently a free bloomer. No doubt it will require a warm moist atmosphere during the growing season, in common with others from the hot country of which it is a native.

Pseudo-bulbs two and a half feet long. Flowers in the way of *D. cumulatum*. Lip ligulate acute, bearing an angle on each side in front of the centre, and a retrorse retuse flat horn at the base. Colour white, orange in the middle, amethyst at the top.—*Gardener's Chronicle*, N.S., vol. xvi., p. 102.

SENECIO STENOCEPHALA, *var.* COMOSA. An herbaceous perennial, from the neighbourhood of Hakone, and likely to be hardy. It was shown during the summer of 1881 by Mr. Bull, at South Kensington.

The flowers, which are yellow, are borne on moderately tall, erect stems, each of which is furnished with several leaves. Flower heads six inches long. Bracts linear. Involucre cylindrical, three times longer than broad. The yellow oblanceolate three-toothed ray-florets are female only, solitary in the species, three in the variety comosa, bent downwards; florets of the disk hermaphrodite, twice as long as the greyish-brown pappus; achenes glabrous.—*Gardener's Chronicle*, N.S., vol. xvi., p. 300.

GYNERIUM ARGENTEUM. *Nees* (*alias* Arundo dioica, *Sprengel*; *alias* Arundo Selloana, *Schultes*). A tall reedy perennial, with harsh serrated leaves, and large erect silky plumes of flowers. Belongs to Grasses. Native of Brazil and Monte Video. (Fig. 109.)



This noble plant is now called the PAMPAS GRASS, in consequence of its inhabiting the vast plains of S. America so named. Although but a Grass, it will probably form one of the most useful objects of garden decoration obtained for many years. In stature it rivals the Bamboo, being described as growing in its native plains several times as high as a man. The leaves are hard, wiry, very rough at the edge, not half an inch broad at the widest part, of a dull grey-green colour, much paler below. They are edged by sharp points or teeth, little less hard than the teeth of a file. The flowers appear in panicles from one and a half to two and a half feet long, resembling those of the

common reed, but of a silvery whiteness, owing to their being covered with very long colourless hair, and themselves consisting of colourless membranous glumes and pales. According to Prof. Kunth this species is an Arundo. But to us it appears quite as different from that genus as from Gynerium. And although it is by no means one of the same genus as *G. saccharoides*, yet it may as well preserve its common name, faulty though it be, as be transferred to Arundo, from which it must be expelled. The inflexed hook of its pales is extremely remarkable, and, together with its dioecious character, leads to the inference that it may be a genus distinct from either.





THE SHOWY SENECIO.
(SENECIO SPECIOSUS.)

[PLATE 35.]

THE SHOWY SENECIO.

(SENECIO SPECIOSUS.)

A Half-hardy Perennial Herbaceous Plant, from SOUTH AFRICA, *belonging to the Natural Order* ASTERACEÆ.

Specific Character.

Rootstock thick and fleshy, with several radical and a few cauline, pinnatifidly lobed, oblong-oblanceolate obtuse leaves, which are thick and fleshy, and covered with viscid hairs, as are also the stem, bracts, and involucres: sometimes the hairs on the branches of the stem and involucre are very long and shaggy. The stem branches in a corymbose manner, and bears from three to ten radiate flower-heads one and a half inches in diameter. Both ray and disk are of a beautiful bright purple.

Gardener's Chronicle, N.S., vol. xii., p. 615.

THIS plant belongs to an extremely numerous family, of which the well-known Cineraria of our greenhouses, and the still more familiar garden weed groundsel, are members. It seems to be somewhat variable in its character, especially in the shade of colour it assumes, which in some individual examples is deeper than it is in others, as also in the length attained by the viscid hairs with which the stem, leaves, bracts, and involucres are thickly covered. It is of a somewhat close tufted habit, the leaves spreading and laying moderately close to the ground, as shown in our illustration of the plant, much reduced in size. The flower-stems, each bearing as many as a dozen flowers, one and a half inches in diameter, rise from the base of the central leaves and assume an erect position; the flowers are of a rosy-purple colour, very bright and showy. This is the plant distributed by Mr. Bull some time back, and supposed to be *S. concolor*, with which species it seems through a mistake to have been confounded. The subject of our plate is half-hardy, and remarkably free in its habit of flowering, blooming in succession through a considerable portion of the

year. Its distinct appearance makes it an agreeable addition to our greenhouse plants, amongst which in recent years there has been a tendency to confine the cultivation within too narrow limits; Fuchsias, Pelargoniums, Primulas, and Tuberous Begonias, along with the members of a few other genera, being frequently seen present in such numbers as to exclude that variety in form and general character, which it is so desirable for a plant-house to possess.

This Senecio can be raised from seeds sown at any time during the spring or summer, but the earlier the better, as they then have a chance of getting strong before the advent of winter. Sow in shallow pans, drained and filled with sifted soil, composed of good loam, to which should be added a liberal portion of sand; cover the seeds very lightly, and stand the pans in a warm greenhouse under a propagating glass, using no more water than requisite to keep the soil in a slightly moist condition. As soon as the seedlings are large enough, prick them off a few inches apart, in pots or pans, filled with material similar in character to that in which the seed was sown, giving them plenty of light and air. When the young plants have attained a size sufficient to require separating, move them singly into three-inch pots, using the soil a little more lumpy than before; give enough water to keep them in a healthy growing state, and as more root-space is needed, let them have larger pots, but for ordinary decorative purposes medium-sized examples will in the majority of cases be found most useful. Being of a half-hardy nature, the plant will thrive out in the open ground during summer, and it is very likely that in such a situation the colour of the flowers and its general appearance will be brought out better than when confined under glass.

Our illustration was taken from a plant in the possession of Mr. Ware, at the Hale Farm Nurseries; it was growing planted out in a pit, and although covered overhead with glass, the position it occupied was so airy that the covering was rather a means of giving slight protection than of confining the plant as a greenhouse would have done.



THE SPECKLED ODONTOGLOT.
(ODONTOGLOSSUM NÆVIUM.)



[PLATE 36.]

THE SPECKLED ODONTOGLOT.

(ODONTOGLOSSUM NÆVIUM.)

A Stove Epiphyte, from the ANDES OF NEW GRANADA, *belonging to the Order of* ORCHIDS.

Specific Character.

THE SPECKLED ODONTOGLOT.—Pseudo-bulbs ribbed. Leaves thin, lanceolate, narrowed to the base. Panicles spreading. Sepals and petals narrow, ovate-lanceolate, acuminate, wavy. Lip of the same form, with a slight tendency to become hastate, with the two teeth of the crest large, downy, somewhat three-lobed. Processes of the column subulate, spreading.

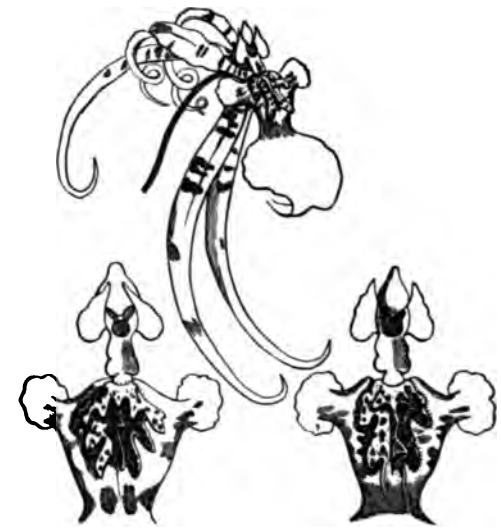
IN Central America there exists a herd of Odontoglots the distinctions between which can hardly be settled, in the first instance at least, by dried specimens. They have all a similar habit, branching panicles, and white-lipped flowers spotted with crimson, with long narrow wavy divisions.

The plant represented in the illustration was sent to England by Sir R. Schomburgk, and was exhibited by Mr. Loddiges at one of the Spring meetings of the Horticultural Society. What appears to be the same species is No. 721 of Mr. Linden's herbarium of 1846, found by his collectors, Funck and Schlim, at the height of 6,000 feet, at St. Lazaro and La Peña, in the province of Truxillo, and said to have a *yellow* lip spotted with crimson—a circumstance possibly connected with the colour of the fading flowers. Another supposed variety of this same plant was flowered by Messrs. Rollisson in June, 1847, with rather larger blossoms: and in that particular it would appear as if these Odontoglots were subject to considerable differences, just as we have large and small states of the Ample Oncid (*Onc. ampliatum*), the Sphacelated Oncid, and even the Wentworth Oncid, of which last Sir Philip Egerton flowered a magnificent form.

Pseudo-bulbs ovate, compressed, rather strongly but bluntly ribbed. Leaves narrowly oblong, tapering to the base, single on the pseudo-bulbs, shorter than the panicle. Flowers pure white, speckled everywhere with rich crimson, arranged in the garden plant in a narrow

racemose panicle; in what appears to be the same thing wild they form a loose branched panicle of considerable size. Bracts very short, scale-like. Sepals and petals from an ovate base linear-lanceolate, acuminate, spreading equally and very wavy. Lip of the same form and colour, but shorter, downy, very slightly halberd-shaped near the base, which is yellow, with the edges of the claw clasping the column. Teeth of the crest yellow, rather small, distinct, with about three unequal blunt lobes to each; downy. Column downy, narrowed to the base, with a pair of awl-shaped ears near the summit, below the anther-bed.

The resemblance of this to the Long-tailed Oncid (*O. phymatochilum*) is so great as to raise a question as to the distinction between Oncids and Odontoglots. We have often opened this discussion, and endeavoured to show how the two genera could be certainly separated; but it must be owned that, after all, there is something vague and unsatisfactory in the characters usually assigned to the genera. Species, indeed, have been indifferently placed in one or the other, or species stationed in the Oncids by one botanist have been referred to the Odontoglots by another. It will therefore be useful to explain that, in addition to any other distinction, this may be taken as unexceptionable, namely, that the Oncids have a short column, tumid at the base in front, as in the annexed cut of *Oncidium phymatochilum*, while the Odontoglots have a lengthened column without any such tumour.



The management of this, and all such plants, is precisely what is required for the Spotted Oncid (*O. maculatum*).

GLEANINGS AND ORIGINAL MEMORANDA.

IXORA REGINA. Amongst the many seedling varieties of these fine evergreen stove plants which have been raised in recent years, this is one of the most distinct. It was awarded a First Class Certificate by the Floral Committee, before whom it was shown by the raiser, Mr. John Fraser, of the Lea Bridge Road Nurseries. Like the rest of the Ixoras, which are the finest of stove plants, it will require a warm stove to grow it well, with moderate pot room, using good fibrous peat with a medium amount of sand added. Even in the winter season all the species and varieties require that the soil should be kept fairly moist, as being evergreen, they will not bear it getting too dry.

The flowers are bright orange, with a slight tinge of pink. It is a profuse bloomer, the trusses of flower literally covering the plant.

NEPENTHES RAJAH. *Hook, f.* Long written and spoken of, living plants are at last available. It is twenty-five years since we first saw dried pitchers of this wonderful plant brought home by the collector Henshel, on returning from his long trip in the East, where he had been out for the Messrs. Rollisson. Messrs. Veitch have now succeeded in raising plants from seeds brought by Mr. Burbidge from Borneo, who also secured well-dried pitchers that, although, as they undoubtedly are, to some extent shrunk, give a fair idea of the remarkable size and form of this prince of pitcher plants. A fine young example was exhibited by Messrs. Veitch, before the Floral Committee of the Royal Horticultural Society at South Kensington, in October, 1881, and was unanimously voted a First Class Certificate. The colour is dull purple, the whole character of the plant strong and vigorous, promising to be one of the greatest acquisitions that have ever been introduced, and a welcome addition to our already numerous plants possessing singular leaf development. Like others of the family, it will require a high temperature to grow it successfully, accompanied by a moist atmosphere, and the soil during the growing season all but saturated with water.

Leaves coriaceous, glabrous, oblong, tapering at the base into a conduplicate channelled-leaved stalk, apex rounded, tendril given off, not from the apex as usual, but from the under-surface, a short distance below the apex. Pitchers dull purple, pilosulous, broadly cylindric or slightly saccate, slightly dilated at the base, ribbed ribs slightly fringed; mouth very broad, oval, purplish, closely ribbed, ribs ending in sharp comb-like points; lid suborbicular, spurred at the back, smooth within. Borneo, Kina Balou; altitude 5,000 feet.—*Gardener's Chronicle*, N.S., vol. xvi., p. 492.

KNIPHOFIA UVARIA, *var.* MAXIMA. Most people at all acquainted with herbaceous plants know the common *Kniphofia uvaria*, or, as more generally called, the Red-hot Poker Plant, of which this is a distinct form. It comes from the Orange Free State. Like the red kind, it will thrive out of doors in ordinary garden soil, but should have some protection in winter.

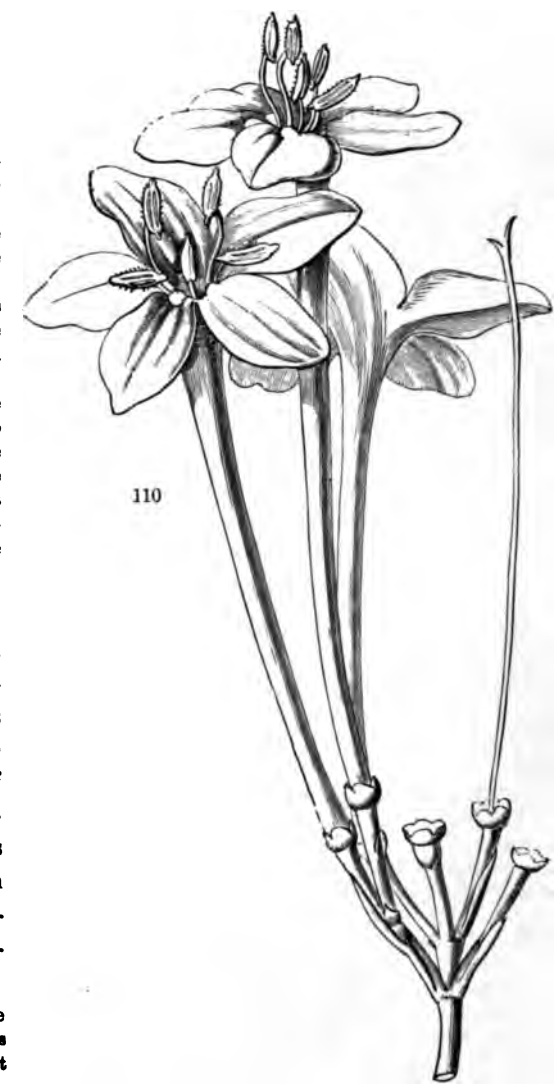
Leaves linear, four or five feet long, an inch and a half broad, tapering, pointed. Scape four or five feet long, as thick as a man's thumb. Racemes dense, subspicate, oblong-cylindrical, a foot or more long; flowers all deflexed; pedicils very short; bracts lanceolate, a quarter to half an inch long. Perianth yellow, tinged with red; segments lanceolate-deltoid. Stamens and style both considerably exserted.—*Botanical Magazine*, 6553.

POSOQUERIA FORMOSA. *Planchon* (*alias* Stanina formosa, *Karsten*). A very fine stove plant, from the Caraccas, with long white flowers. Belongs to Cinchonads. Introduced by M. Karsten. Flowered by M. Van Houtte. (Fig. 110.)

A fine tree, from the virgin forests of the mountains of Tovar, at the elevation of 5,000 to 6,000 feet above the sea. It grows from 12 to 20 feet high. Its leaves are broad, oblong-lanceolate, wavy, leathery like a laurel. The flowers are 3 to 4 inches long, pure white, slender-tubed, and highly fragrant. When in fruit it is said to resemble an apple-tree. Nearly related to the Gardenias, as which it requires the same cultivation.—*Flore des Serres*, t. 587.

ONCIDIUM LURIDUM ATRATUM. *Lindley.* A handsome orchidaceous Epiphyte, from Mexico, with rich crimson flowers. Introduced by the Horticultural Society.

Whether or not *O. luridum* is really a mere variety of the Carthagena Oncid becomes more and more doubtful as our knowledge of such plants extends. In the present instance it is unnecessary to open that question, the plant now mentioned being undoubtedly a very fine form of the lurid Oncid, whatever the relation of the latter to the Carthagena Oncid may finally prove to be. With the habit of the common form of the species this combines flowers smaller than usual, very flat, with olive and rose-coloured sepals and petals, and a rich crimson lip furnished at the base with five purple-black tubercles, four of which surround the fifth; of these tubercles, the central and two anterior are oblong and simple, the two posterior are concave, or almost kidney-shaped, with the concavity backwards. The wings of the column are oblong truncated fleshy bodies attached by the narrowest end. It is a fine variety, in some respects like the purple-lipped Oncid (*O. hæmatochilum*), and requiring the same treatment as *O. luridum* itself.—*Journal of Hort. Soc.*, vol. vi.



110

ODONTOGLOSSUM VEXILLARIUM SUPERBUM. *H. G. Reichenbach, f. Odontoglossum vexillarium* is most variable in the colour of its large massive flowers. The variety here mentioned is evidently one of the finest, if not the very finest, that has yet been seen. It appears to be one of the many fine things imported by Mr. F. Sander, and has been flowered by R. P. Percival, Esq., of Clevelands, Birkdale, Southport. Professor Reichenbach thus describes it:—

Lip very dark purple, with a radiating blackish zone before its base, bordered in front with fine white. Petals purple, the sepals lighter, each lateral one with a line at its base.—*Gardener's Chronicle*, N.S., vol. xvi., p. 364.

CENTROSOLENIA GLABRA. *Bentham.* A hothouse plant from La Guayra, with pale yellow fringed flowers. Belongs to Gesnerads. Introduced at Kew. Flowers in autumn.

A plant imported through Mr. Wagener, a German collector. It forms a stove plant, and keeps up a succession of flowers with us through the autumnal and early winter months. We submitted the figure to Mr. Bentham for his opinion, as he had paid much attention to the family to which it belongs, and has published the result of his observations in the 5th volume of the 'London Journal of Botany,' p. 357, &c. That gentleman considers the plant as clearly constituting a second species of his new genus *Centrosolenia* (l. c., p. 362). Decaisne's *Trichanthe*, since published, probably in the 'Revue Horticole,' for 1848, he believes to be identical with *Centrosolenia*. If so, it must give place to the latter name, which appeared in 1846, and consequently has the right of priority. An erect plant, with a succulent reddish-brown, terete stem, a foot or more high. Leaves succulent, smooth, the lower ones six to eight inches long, opposite; each pair singularly unequal in size, one being small, lanceolate, and acuminate; the other large, ovate, tapering at the base into a stout petiole, and acuminate at the apex; the margin serrated. Corolla tubular, enlarged upwards, projected below into a short obtuse spur, the whole tube about an inch and a half long, clothed outside with a short thin down, the limb divided into five broad short lobes, of which the three lower are fringed with long thread-like laciniæ; inside of the corolla smooth. Annular disc nearly obsolete, with a large posterior gland. (Mr. Fitch represents two glands,—one anterior, the other posterior, and of nearly equal size.) Ovary wholly superior, with two lamelliform, bipartite, parietal placentæ. Style smooth, thick, somewhat clavate, with the stigmatic extremity rarely emarginate.—*Botanical Magazine*, t. 4552.

GERANIUM THUNBERGII. *Siebold.* A prostrate annual, with small purple flowers. Native of Japan. (Fig. 111.)

An annual, with hairy prostrate stems; leaves long-stalked, with long spreading hairs, rather fleshy, 5-lobed, flat, the lower lobes much the smallest, the others 3-lobed, and slightly serrate. Peduncles 2-flowered, longer than the leaves. Petals deep purple, undivided, obovate, larger than the mucronate sepals. Probably the *G. palustre* of Thunberg.

ECHINOCACTUS VISNAGA. *Hooker.* (*alias*? E. ingens *Zuccarini.*) A noble plant from Mexico, belonging to the Natural Order of Indian Figs (Cactaceæ). Flowers bright yellow, produced at Kew.



Of this singular species, Sir William Hooker gives the following account:—"One of the most remarkable plants in the Cactus-house of the Royal Gardens of Kew, and that which chiefly attracts the attention of strangers, is the subject of the present plate. It bears the name of *Visnaga* with us (*Visnaga* means a tooth-pick among the Mexican settlers, and the plant is so called because that little instrument is commonly made of its spines), and under that name, believing it to be a new species, we had described it, and it was figured in the *Illustrated News* for 1846. I had, at one time, been disposed to refer the species to the *Echinocactus ingens*, of which a brief and most unsatisfactory character is drawn up by Pfeiffer (for Zuccarini does not appear to have noticed it) from some 'dried flowers,' and a living specimen 'six inches high;' but it can scarcely be that, for the angles of the plant are said to be eight, the aculei nine in a cluster, and the petals obtuse. Our plate represents a very diminished figure of a specimen, unfortunately no longer existing, but which, in 1846, was an inmate of our Cactus-house, and apparently in high health and vigour. Its height was nine feet, and it measured nine feet and a half in circumference, its weight a ton. After a year of apparent health and vigour, it exhibited symptoms of internal injury. The inside became a putrid mass

and the crust, or shell, fell in with its own weight. Other lesser ones were already, and are still, in the collection; and the one, from which one small flowering portion is represented of the natural size, weighs seven hundred and thirteen pounds, its height is four feet six inches, its longitudinal circumference ten feet nine inches, and its transverse ditto eight feet seven inches; its ribs amount to forty-four. All our plants were procured with great labour, and sent many hundred miles, over the roughest country in the world, from San Luis Potosi, Mexico, to the coast, for shipping, and presented to the Royal Gardens by Fred. Staines, Esq. It flowers through a good part of the year, but, in comparison with the bulky trunk, the blossoms are quite inconsiderable and void of beauty." The summit of the trunk is crowned with a dense mass of tawny wool, concerning which it is remarked, that "this wool covers the whole *crown* of the plant, and is a few inches deep; and we are much mistaken if it is not a tuft of this substance, taken from an *Echinocactus Visnaga*, which constitutes that botanical curiosity from Mexico, long in the possession of the late Mr. Lambert (now at the British Museum), known under the name of the *Muff Cactus*. A small quantity taken off the plant may, by handling and admitting air within the *staple*, be distended to a considerable size. An entire mass from a good-sized plant, thus treated, might be made to assume the cylindrical form of the specimen alluded to."—*Botanical Magazine*, t. 4559.

BOMAREA CONFERTA. *Benth.* This, which is a native of Bogata, is another of these beautiful and very distinct flowering plants, which are fine additions to our greenhouse or intermediate house climbers. They are strong growers, doing the best when planted out like the Lapagerias, which latter the Bomareas so far resemble in habit that they annually push up shoots from the crown of the plant below ground. The flowers are produced in large drooping tufts at the points of the shoots. They are free-growing plants; any ordinary well-drained turfy soil will answer for them.

Leaves scattered, shortly stalked, petioles flattened and twisted; the blades four to five inches in length by three-quarters to one inch in breadth, broadly lanceolate, tail-pointed, glabrous above, lightly pubescent beneath. Flowers numerous, brilliant crimson, intermixed at the base with broadly ovate-acute leafy bracts, each one to two inches long. The individual flowers are two to two and a half inches long, funnel-shaped, the three outer segments ovate-lanceolate, about one-fourth shorter than the inner segments, which are obovate-acuminate, tapering into a long stalk, both of a rich crimson colour. Filaments slender, glabrous, nearly equalling the inner segments in length. Anthers oblong, about one-sixth of an inch long. Ovary about a quarter of an inch long, angular, turbinate, and downy. Style slender, as long as the stamens, three-toothed at the summit.—*Gardener's Chronicle*, N.S., vol. xvi., p. 330.

HOMALONEMA WALLISII. This is an Aroid with handsomely marked leaves, dark green, marbled with greenish-white. It is one of Mr. Bull's introductions from New Granada, where it was discovered by Wallis. A plant of easy cultivation, requiring ordinary stove treatment; soil and general management such as found to answer for Dieffenbachias will suit it.

Rootstock subterranean, stout, aromatic. Leaves numerous, spreading, thickly coriaceous, four to six inches long, oblong or oblong-ovate, glabrous, dark green above with pale blotches. Peduncle one to one and a half inches long. Spathe three inches long. Spadix almost as long as the spathe, slender, cylindric, obtuse. Stamens three, very short, cells globose. Ovary obovoid, compressed, two to three celled; ovules numerous, inserted on placentas projecting from the septum, anatropous or semi-anatropous.—*Botanical Magazine*, 6571.

AQUILEGIA FORMOSA. Another of the handsome perennial Columbines, which form such a conspicuous feature in gardens at the present day; they are easily cultivated, ordinary soil and an open situation being all they require to grow them well. It comes from the Rocky Mountains and California, and flowers in July and August.

Stem slender, one to three feet high, more or less glandular, hairy above. Leaves biternate, ultimate segments cuneiform, obtusely lobulate and crenate. Flowers on slender peduncles, one and a half to two inches long, brick-red and yellow or wholly yellow. Sepals lanceolate, acuminate, horizontally spreading in the red flowered forms with a golden band down the centre. Petals with the limb suborbicular in outline, tip rounded or subacute, margin rather recurved; spur long or short, sometimes one and a half inches long, tips scarcely incurved, slightly swollen. Filaments far exserted, of different lengths, outer almost twice as long as the inner; anthers scattered. Styles shorter than the largest stamens.—*Botanical Magazine*, 6552.

Cymbidium Lowianum, 128
— Parishii, 63
Cyperus laxus variegatus, 76
Cypripedium barbatum, 60
— caricinum, 61
— caudatum, 58, 61, plate 12
— glanduliflorum, 61
— grande, 139
— guttatum, 182, fig. 107
— Haynaldianum, 12
— insigne, 61
— javanicum, 59
— Lawrenceanum, 127
— Lindleyanum, 61
— Lowei, 61
— lucidum, 84
— purpuratum, 60
— Spicerianum, 94
— venustum, 59
— vexillarium, 105

DAPHNE HOUTTEANA, 168
Davallia elegans polydactyla, 152
Dendrobium candidum, 53, fig. 41
— crepidatum, 53, fig. 40
— Egertoniæ, 53, fig. 44
— mesochlorum, 53, fig. 43
— palpebræ, 44
— (Pedilonum) Curtisii, 183
— revolutum, 53, fig. 42
— superbiens, 13, plate 3
Dianthus cruentus, 106, fig. 77
Dieffenbachia Leopoldii, 83
— Shuttleworthii, 63
— splendens, 93
Dipladenia hybrida, 181
Dipteracanthus spectabilis, 70, fig. 50
Dodecatheon integrifolium, 76
Dracæna Bausei, 44
— Goldieana, 6

ECHEANDIA TERNIFLORA, 107, fig. 78
Echinocactus rhodophthalmus, 6
— visnaga, 191
Echinopsis cristata, 103
Echites peltata, 19, fig. 11
Encephalartos Hildebrandii, 40
Epacris onosmæflora flore-pleno, 30
Epidendrum antenniferum, 183, fig. 108
Erica elegantissima, 49
Erigeron multirodiatus, 157
Eriocnema marmoratum, 20, fig. 14
Erythrina erythrostachya, 113
Eucharis candida, 32

FORTUNE'S DOUBLE YELLOW ROSE, 171
Franciscea eximia, 166
Fritillaria recurva, 10
Fuchsia nigricans, 29, fig. 23
— venusta, 74, fig. 55

GALANTHUS PLICATUS, 38
Galphimia glauca, 52
Garrya elliptica, 50
Gaultheria Lindeniana, 105, fig. 76
Geranium Thunbergii, 191, fig. 111
Gonolobus Martianus, 21, fig. 17
Gordonia javanica, 137, fig. 90
Grammanthes gentianoides, 11, fig. 7
Gynerium argenteum, 183, fig. 109
Gynoxys fragrans, 72, fig. 52

HAKEA CUCULLATA, 115, fig. 82
Hamamelis arborea, 152
Hardy azaleas, 65, plate 13
Hedychium chrysoleucum, 103, fig. 74
Helianthemum scoparium, 10
Helichrysum frigidum, 137
Heliconia angustifolia, 50
Hippeastrum (amaryllis) robustum, 118
Homalonema Wallisii, 192
Hoya coriacea, 72, fig. 53
— ovalifolia and pallida, 145, plate 28
— purpureo-fusca, 72, fig. 54
Hymenocallis Borskiana, 148
— macrostephana, 117
Hypocyrta gracilis, 114, fig. 80

ILEX CORNUTA, 31, fig. 26.
— microcarpa, 31, fig. 27
Imantophyllum miniatum, 152
Iris cretensis, 52
Isoloma breviflora, 54
Ixiolirion montanum, 161, plate 31
Ixora Duffii, 52
— Regina, 189
— salicifolia, 104

JASMINUM GRACILLIMUM, 121, plate 23
Juniperus sphærica, 38, fig. 30

KNIPHOFIA UVARIA, *var.* MAXIMA, 189

LÆLIA DAYANA, 20
— grandis, 40, fig. 33
— Mylamiana, 20
Lagetta lintearia, 29, fig. 24
Lardizabala biternata, 21, fig. 18
Lastrea Richardsii, *var.* multifida, 158
Libertia paniculata, 30
Libocedrus Chilensis, 44, fig. 37
— tetragona, 43, fig. 36
Lilium nitidum, 72
— speciosum, *var.* glorioscides, 127
— Wallichianum, 107, fig. 79
Linum grandiflorum, 19, fig. 13
Lisianthus princeps, 82, fig. 59
Luvunga scandens, 101, fig. 72
Lycaste chrysoptera, 118
Lysionotus serrata, 167

MARANTA CROCATA, 152
— (?) ornata, 49
Masdevallia Chelsoni, 106
— Harryana, 24
Medinilla magnifica, 91, plate 18
— Sieboldiana, 115
Mertensia sibirica, 8
Metrosideros buxifolia, 120, fig. 86
— florida, 49
— tomentosa, 6
Microsperma Bartoniodes, 12
Millettia megasperma, 149
Mirabilis multiflora, 8
Monardella macrantha, 22
Moussonia elegans, 119, fig. 85
Moutan officinalis; atrosanguinea, 35, plate 8
— — salmonea, 123, plate 24
Moutans, Japanese list of, 124

NEPENTHES BICALCARATA, 93
— chelsonii, 46
— Hookerii, 46
— lanata, 46
— Outramiana, 113
— Rafflesiana, 46
— Rajah, 189
— robusta, 113
— sanguinea, 45, plate 9
— Sedenii, 46
Nerine filifolia, 182
Nymphæa alba, *var.* rosea, 57, plate 11
— tuberosa, 168

OCHNA ATRO-PURPUREA, 119, fig. 84
Odontoglossum Cervantesii, 129, plate 25
— Londesboroughianum, 42
— maxillare, 130
— nævium, 187, plate 36

Odontoglossum Rossii, 130
— rubescens, 17, 130
— stellatum, 130
— vexillarium, 33, plate 7
— — superbum, 190
Oncidium elegantissum, 38
— hæmatochilum, 131, plate 26
— hastatum, 5
— leucochilum, 104
— luridum atratum, 190
— nigratum, 74
— phymatochilum, 74, 188
— planilabre, 167
— serratum, 20, fig. 15
Opuntia salmiana, 151, fig. 98

PARSONSIA HETEROPHYLLA, 82, fig. 60
Passiflora Belottii, 18
— Medussæa, 81, fig. 57
Pentarhaphia cubensis, 10
Pentstemon azureus, 56
— cordifolius, 18
Peperomia prostrata, 128
Pescatorea Klabochorum, 109, plate 21
Phaius tuberculosus, 150
Phalænopsis equestris (rosea) leucapsis, 170
— intermedia, *var.* Portei, 153, plate 29
Polygonum cuspidatum, 125, fig. 87
Portlandia platantha, 171, fig. 106
Posoqueria formosa, 190, fig. 110
Potentilla arbuscula, 140
— fruticosa, 140
— glabra, 140
— ochreata, 140, fig. 93
— Salesovii, 140
Primula capitata, 170
— rosea, 106
Pritchardia grandis, 22
Prunus divaricata, 158
Pultenæa rosea, 23
Pyrus (malus) floribunda, 173, plate 33

QUERCUS INVERSA, 38, fig. 31
— sclerophylla, 39, fig. 32

RENANTHERA STORIEI, 84
Rhaponticum acaule, 51, fig. 39
Rhipsalis pachyptera, 149, fig. 96
Rhododendron cinnamomeum, *var.* Cunninghami, 15, plate 4
— jasminiflorum, 87, fig. 67
— ponticum, *var.* Vervaeneanum, 16
— seedling variety (A. B. Mitford), 89, plate 17
Rhodoleia Championi, 42
Rhodothamnus Kamtchaticus, 111, plate 22
Rogiera amœna, 138, fig. 92
Rondeletia Backhousii, 8
Roupellia grata, 62, fig. 45
Rubus rosæfolius, 128

SACCOLABIUM HENDERSONIANUM, 18
Sagenia Lawrenciana, 135
Salvia Bethellii, 157
— pians, 147
— Pitcherii, 137
Sarcopodium Lobbii, 148, fig. 95
Sarracenia atrosanguinea, 76
— crispata, 95
— Drummondii, 27, plate 6
— flava ornata, 82
Scabiosa pterocephala, 152
Selaginella bellula, 115
— Victoriæ, 105
Senecio speciosus, 185, plate 35
— stenocephala, *var.* comosa, 183
Siphocampylus Orbignyanus, 104, fig. 75
Solandra lævis, 169, fig. 104
Spathodea lævis, 150, fig. 97
— speciosa, 12
Spathoglottis aurea, 18
Spiræa decumbens, 11, fig. 6
— palmata, 3, plate 2
Stanhopea cirrhata, 23, fig. 19
Stanhopea ecornuta, 23, fig. 20
— tricornis, 23, figs. 21, 21*a*
Statice tatarica, 172
Steriphoma paradoxum, 95, fig. 70
Stylidium mucronifolium, 152, fig. 99
— saxifragoides, 136, fig. 89
Symplocos japonica, 51, fig. 38

TABERNÆMONTANA LONGIFLORA, 54
Theresia persica, 22
Thiebaudia scabriuscula, 71, fig. 51
Tigridia lutea, 30
Tillandsia bulbosa, 160
— eminens, 160
— erythræa, 160
— inanis, 159, 160, figs. 100, 101
— pumila, 160
Todea intermedia, 52
Trichopilia suavis, 32, 163, plate 32
Trichosacme lanata, 93, fig. 68
Tropæolum Deckerianum, 21, fig. 16.
Tulipa Schrenki, 84
— undulatifolia, 40
Tupa crassicaulis, 55

UROPEDIUM LINDENII, 56

VALORADIA PLUMBAGINOIDES, 6
Vanda teres aurorea, 168
Verbena trifidi, 167, fig. 103
Veronica formosa, 117, fig. 83
— longifolia, *var.* subsessilis, 85
Viburnum plicatum; *var.* dilatata, 99, plate 20
Victoria Regia, 180
Vriesia Falkenbergii, 157
— Regina, 42

WARREA BIDENTATA, 64, fig. 46
— candida, 24, fig. 22
— discolor, 69, fig. 47

ZEPHYRANTHES MACROSIPHON, 172

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